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ABSTRACT

Developed as a vehicle of communication for the Reading Recovery Council of North America, this journal represents an international effort to connect researchers, teachers, and all those interested in early literacy. Articles in the first issue of this third volume are: "Relations between Children's Literacy Diets and Genre Development: You Write What You Read" (George Kamberelis); "At-Risk Children's Metacognitive Growth during Reading Recovery Experience: A Vygotskian Interpretation" (Beverly E. Cox, Zhihui Fang and Maribeth Cassidy Schmitt); "Reading Recovery in the United States: More than a Decade of Data" (Carol A. Lyons); and "Student Aspirations: Reading Recovery May Influence More Than Literacy Development" (Anne K. Rhodes-Kline and Russell J. Quaglia). Articles in the second issue are: "Scaffolding Emergent Writing in the Zone of Proximal Development" (Elena Bodrova and Deborah J. Leong); "Common Roots and Threads: Developmentally Appropriate Practice, Whole Language, and Continuous Progress" (Wendy C. Kasten, Elizabeth Monce Lolli, and Judith Vander Wilt); "The Early Development of a Self-Extending System in Writing" (Christine Boocock, Stuart McNaughton, and Judy M. Parr); and "An Examination of Sustaining Effects in Descubriendo la Lectura Programs" (Kathy Escamilla, Martha Loera, Olivia Ruiz, and Yvonne Rodriguez). (RS)

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Table Of Contents

Relations Between Children's Literacy Diets and Genre Development: You Write What You Read
George Kamberelis 7

At-Risk Children's Metacognitive Growth During Reading Recovery Experience: A Vygotskian Interpretation
Beverly E. Cox, Zhihui Fang, and Maribeth Cassidy Schmitt 55

Reading Recovery in the United States: More than a Decade of Data
Carol A. Lyons 77

Student Aspirations: Reading Recovery May Influence More than Literacy Development
Anne K. Rhodes-Kline and Russell J. Quaglia 93

Relations Between Children's Literacy Diets and Genre Development: You Write What You Read

George Kamberelis, Purdue University

Abstract

The purpose of this study was to investigate young children's developing understanding and use of three particular school-based genres (stories, information reports, and poems) in relation to their situated experiences with these genres at home and in school. Fifty-four kindergarten, first-grade, and second-grade children composed original texts representing each of these genres. Children were also interviewed about why their texts represented certain genres and where they typically learned about different genres. Contextual data were collected to document the reading and writing children did at home and at school, as well as the metadiscourse used by their teachers to discuss different genres. All children's compositions were coded for a variety of textural and structural features that tend to distinguish among the three focal genres. Texts and interviews were then analyzed using both qualitative and quantitative analysis techniques. Contextual data were analyzed quantitatively. Analyses demonstrated that children possessed considerably more knowledge about narrative genres than informational and poetic genres. Analyses also revealed that children were exposed to narrative discourse and metadiscourse far more than to other kinds of discourse and metadiscourse, suggesting a strong relationship between children's literacy diets and their genre knowledge. Directions for future research and implications for pedagogy are discussed.

The term genre is used informally to refer to different ways of organizing communicative activity, whether the semiotic medium of expression is oral text, written text, graphic art, film, video, or some other medium (Bakhtin, 1986; Gee, 1990; Hicks, 1990). For example, I once overheard a group of students in a local café characterize the film *Paris Is Burning* as a poststructuralist satirical film noir. While it might be difficult achieving consensus about such a characterization, most people would agree that this utterance presents a nice example of the genre (fication) of everyday discourse or perhaps more precisely, contemporary chic urban café discourse. Most would also agree that it is commonplace in both everyday (and professional) life to engage in similar discourse practices wherein a certain poem is discussed as Beat ("Howl"), a song is referred to as an

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example of the Blues ("Come on in My Kitchen"), or a painting is talked about as Cubist ("Guernica").

Indeed, competent speakers and writers both produce and consume forms of discourse (*genres*) that adhere to cultural conventions, that are appropriate for particular social and cultural occasions, and that accomplish specific communicative goals. Genres function as cultural frames for virtually all communicative activity. They consist of relatively stable constellations of sentence-level and text-level features. Systems of genres develop within specific communities of practice (Lave & Wenger, 1991), disciplines (Bazerman, 1988), and other social formations, some of which are organized quite formally and others that are quite self-organizing. These systems index the ways in which social formations have narrowed an infinite number of discourse possibilities into a relatively small set of fairly conventionalized and durable codifications (e.g., Bakhtin, 1986; Bakhtin & Medvedev, 1985; Bizzell, 1982; Bourdieu, 1990; Faigley & Hansen, 1985; Miller, 1984). These codifications function indexically, pointing toward the particular contexts in which particular meanings are constructed and particular functions performed (Silverstein, 1985). In this regard, Nystrand (1986) has shown quite convincingly that genres are one of the primary tools by which readers and writers narrow the range of possible meanings and functions of texts (i.e., contextualize such texts).

Genres are also dynamic and flexible cultural frames. They evolve and expand over time. Faced with new communicative goals and purposes, both individuals and collectives adapt available linguistic and cultural resources to accomplish specific rather than broad communicative goals and purposes (Bakhtin, 1986; Bazerman, 1988; Yates & Orlikowski, 1992). New or renewed genres often result from this process. Importantly, new genres reflect changes in real social life, which often lead to changes in cultural world views. Thus the relationship between the social and cultural fabric of a group is a recursive one wherein "genre appraises reality and reality clarifies genre" (Bakhtin & Medvedev, 1985, p. 136). This dialectic provides group members with both predictable expectations for particular genres as well as room for creativity in their production and reception.

Knowledge of genres is critical for the development of communicative competence, which involves the packaging of messages in fairly specific and predictable ways within particular communicative domains. Gaining knowledge of many genres and the typified rhetorical situations that constitute and are constituted by these genres is a primary developmental task for children as they learn how to write, and it becomes ever more important as children move through the educational system (e.g., Berkenkotter & Huckin, 1993; Chapman, 1994; Kamberelis, 1993, 1995). Different genres make their own demands on children with respect to their formal structures, their ordering of thematic material, their conception of the nature and status of knowledge, their rhetorical functions, their social contexts, and the ideologies that inform them. These demands exert effects not only on the structures of whole texts but also on the structures and textures of sub-sentential units, sentences, and sentential combinations. Coming to understand all of these dimensions of genre knowledge and the co-constitutive relations among these dimensions is central to the process of learning to write generatively and effectively.

Although genre learning and use occasionally occur as rule-governed activity, they usually occur implicitly as a function of discourse socialization and practice within particular collectives or disciplinary communities. Like many complex and recondite cultural forms and practices, genres become part of one's durable set of dispositions toward everyday language use and text production. Viewed in this way, learning is located somewhere between the individual and the collective as motivated semiotic practices-in-use. This kind of learning has been emphasized under the rubrics of "situated cognition" (Brown, Collins, & Duguid, 1989; Greeno, 1989), "situated learning" (Lave & Wenger, 1991; Rogoff, 1990), and "socially distributed cognition" (Hutchins, 1995). Within these rubrics, knowledge is integrally linked to the ongoing pragmatic activity of communities. Learning genres or other cultural forms occurs continually "with each new occasion of use because new situations, negotiations, and activities inevitably recast [them] in a new, more densely textured form" (Brown et al., 1989, p. 33). Rather than being explicitly taught the practices of a collective or disciplinary community, new members participate in apprenticeships, "picking up" the requisite knowledge and practices for full membership as they go along.

As legitimate but somewhat peripheral participants within ongoing communities of practice, individuals construct texts that seem to have the general shape and flavor of the texts which they perceive to be common currency within these communities. They do this by borrowing from and building upon prior texts, text fragments, and textualizing habits or conventions at various levels of discourse organization—lexicon, register, grammatical phrasing, discourse units, thematic content, customary tropes, and the like. They also do this in the context of their continued participation in the many local discursive and material activities that occur within the community of practice. Over time, their texts come to more closely approximate the kinds of texts that are valuable and valued within the collective or discipline.

Purpose of the Study

The purpose of this study was to investigate young children's developing understanding and use of three particular school-based genres (stories, information reports, and poems) in relation to their situated experiences with these genres at home and in school. There are several important reasons for studying children's developing understanding and use of different genres. From a scientific point of view, this is a promising new research frontier in the field of literacy. From a more practical point of view, the extent to which children can vary their presentational styles by drawing upon genre knowledge has important consequences for their success with language and literacy tasks. Even more important is the fact that genre-specific communicative competence is necessary for children's long-term success as they progress through the grades (Dyson 1989; Heath, 1983; Kamberelis, 1995; Luke, 1995) and move into the work place (Coupland, 1984;

Fairclough, 1992; Swales, 1990). Greater understanding of genre learning and development should help us to design classroom activities that enhance the communicative competence of all children, thus increasing their levels of school success and prospects for career success.

Relevant Empirical Research

Over fifteen years ago, Gundlach (1981) suggested that focusing on discourse level dimensions of children's writing such as genre would disclose "both interesting common lines of development and information about differences among children and their growth as writers" (p. 140). Surprisingly, only a handful of researchers responded to his call. Moreover, many who did respond embedded questions about genre development and learning within more global research foci (e.g., Dyson, 1989, 1993, 1995; Gundlach, McLane, Stott, & McNamee, 1985; Harste, Woodward, & Burke, 1984; King & Rentel, 1981). Dyson (1989), for example, explored genre as a secondary concern while attempting to construct a model of the relationships among drawing, writing, and social interaction in the lives of young writers. And Harste et al. (1984) noted some of the different genres enacted by children in the context of constructing an encompassing psychosocial theory of writing development.

Several researchers have addressed the issue of genre development more directly. In a set of children's book reenactment studies, for example, Pappas (1991, 1993) investigated the textural and structural variation within narrative and expository texts produced by 20 kindergartners. She found that these children showed an increasing sensitivity to the textural and structural characteristics of both kinds of texts across successive reenactments of the same book. For example, most kindergartners consistently sustained the cohesion of their narrative reenactments with co-referential ties. Although less consistently, most children used co-classification ties to sustain cohesion in their information book reenactments. Most children used the past tense when reenacting narratives and the present tense when reenacting information books. Children also included certain unusual lexical items and syntactic structures from the specific books that they reenacted. Finally, children's "pretend readings" of both kinds of books more closely approximated the actual books with each successive reenactment.

In a cleverly designed quasi-reenactment study, Hicks (1990) investigated the ability of kindergarten through second-grade children to reconstruct—in three different genres—a film they had seen. Immediately after viewing a shortened version of the silent film, *The Red Balloon*, they were asked to recount the film's contents in both the on-line narration genre and the news report genre. An hour later, these children were asked to recount the film as a story.

Among other things, Hicks found that the appropriate use of tense marking increased as a function of age, with older children using past tense (or the historical present) more often in their news reports and stories and present tense more often in their on-line narrations. This effect, however, was related to interactions among grade, task, and task order. Younger children tended to use the past tense inappropriately in their on-line narrations only when the on-line narrations were performed after the news reports. This finding suggests that there was a strong carry-over effect from the news reporting task to the on-line narration task for younger children but not older children.

Employing primarily text production tasks rather than text reenactment tasks, a few researchers have investigated the genre-specific dimensions of children's writing even more directly. Although typically associated with the "modes of discourse" epoch of literacy studies, probably one of the earliest and most widely cited studies of children's developing understanding and use of discourse genres was conducted by Britton and his colleagues. Britton (1970) and Britton, Burgess, Martin, McLeod, and Rosen (1975) proposed three basic rhetorical functions (or generic types): expressive, transactional, and poetic. In addition to these three basic functions, they proposed a number of sub-functions, many of which correspond with the genre categories set forth by literary theorists (e.g., chronicles, biographies, narratives).

In a pioneering and comprehensive set of experimental studies on structural dimensions of different genres, Langer (1985, 1986, 1992) explored the extent to which children and adolescents differentiated between story and report, and how their knowledge of these differences was used in both their writing and reading comprehension. Among other things, she reported that older children possessed more working knowledge of genre conventions and distinctions than younger children. However, genre differences were greater than grade-level differences in almost all analyses performed, suggesting that even the youngest children in the study had relatively stable concepts of the two different genres. Analyses of several macro-level rhetorical structures (title, main idea, sequence structure) of children's written texts revealed significant differences as a function of genre but not for grade. However, analyses of more micro-level rhetorical structures (e.g., temporal and logical sequences, descriptions, evaluations, explanations) yielded differences as a function of genre and also a genre-by-grade interaction, which was accounted for by increased sophistication of the structure of reports but not stories across grades.

Several important and related differences emerged from analyses of children's retellings of texts that they had read. As with the writing task, there were differences as a function of genre in the use of macro-level rhetorical structures. There were also differences by grade for stories only, largely because stories tended to be organized according to macro-level structures while reports tended to be organized according to more micro-level structures. Children's ability to provide the gist of texts differed as a function of genre and there was a genre-by-grade interaction. All children, but especially the younger ones, were more likely to recall the original gist of stories than they were able to recall the gist of reports. Older children tended to provide the original gist of both stories and reports quite well.

Martin and his colleagues (e.g., Martin, 1984; Martin & Rothery, 1981) conducted a set of descriptive studies of the writing of kindergarten through sixth-grade children in Australia. According to the findings from these studies, the predominant genres used by younger children were *picture descriptions* (e.g., This is a tadpole almost lost its tail.) and *observations/comments* (e.g., The Park. One Sunday Morning I went to play football and we had to play Woodlands. ...).

By the time children were in the second and third grades, the predominant genre for all children was *recounting of personal experience*, usually without any sort of crisis or extraordinary occurrence (e.g., Our trip to Liverpool Library. We went to Liverpool Library very happily. We walked there. We sat down and listened to Miss Matthews. Then, after she had finished we filled in a few questions about where things are in the library. ...).

Recounting remained the predominant genre throughout the elementary school years. However, more complex narratives with problem/resolution structures became more common in the later elementary years. In addition, expository genres like the *report* appeared in increasing numbers as children moved through elementary school (e.g., Birds. Birds live up in a tree. If they don't eat they die. Redbirds blackbirds any coloured birds Dark birds light birds. Some birds are small and others are big.).

Although on a much smaller scale, Kroll (1990) conducted a study that was somewhat similar in design and scope to those of Martin and Rothery (1981), following 17 children over a 5-year period from kindergarten through fourth grade. I review only findings from the first 3 years. Kroll reported, among other things, that most kindergartners' writing consisted of labels or one-sentence descriptions that accompanied drawings. When kindergarten children did write stories, their content was often borrowed from the culture they were concerned with, that of fantasy and the characters the media invented for them. Some children copied basal phrases or wrote basal-like texts.

In first grade, the children began producing many more narrative texts. Most of these were personal narratives. As the year progressed, these personal narratives became longer and more elaborate, but seldom did they accord very well with typical story grammars. In the later part of the school year, first graders began to expand their topics and genre repertoires. In addition to personal narratives, they began to attempt to write fictional pieces. They also began to use the genre markers and conventions of stories more competently. In addition, a few children began writing proto-expository pieces including interviews with one another, lists of favorite things, and informational texts.

In second grade, many children began producing stories that began with the introduction of a main character and with the introduction of that character's problem. This beginning was followed by a number of incidents that, while coherent within themselves, were connected only minimally. The endings of these stories, when the stories were completed, tended to be contracted into a few sentences where the final problem was solved with little elaboration or complexity. Although narrative was the dominant genre used by second graders, many children did experiment with different expository forms as well (e.g., commercials, recipes, interviews, poems).

In a descriptive study conducted in a first-grade classroom, Sowers (1985) found that two genres predominated in children's writing—the past-event personal narrative and a truncated informational text that Sowers called an *all about* *book* (e.g., Alligators eat people. Alligators live in the water and on land. Alligators sleep with their mouths open. ...). At the beginning of the school year, children wrote about twice as many *all about books* as they wrote stories. Toward the end of the year, however, the stories produced by the children outnumbered the *all about books* by about three to one.

In perhaps the most extensive descriptive study of structural aspects of children's non-narrative written texts, Newkirk (1987, 1989) examined 100 texts composed by first-grade, second-grade, and third-grade children. These texts were a subset from a larger sample of both narrative and non-narrative texts produced by the children. Using a structural analysis scheme similar to Langer's (1986), Newkirk (1989) identified eight distinct types of non-narrative texts produced by these children: *labels, basic lists, attribute series, reason lists, couplets, hierarchical attribute series, unordered paragraphs,* and *ordered paragraphs*. These eight types are ordered hierarchically (more or less) from least to most complex. A label is a one-word, a one-sentence, or a multi-sentence description of a picture. A basic list has a series of names, dates, facts, etc., usually not in sentence form. An attribute series is a set of one-clause statements that typically outlines facts and feelings about a topic. A reason list has a series of statements that provide reasons for a proposition or a way of doing something. A couplet is a proto-informational text consisting of one or more two-clause units. These might include identification + information, question + answer, statement + reason, or statement + example. A hierarchical attribute series is a series of statements organized into categories, which are not necessarily ordered in any specific or logical way. An unordered paragraph includes three or more clausal statements that are coherently connected. Finally, an ordered paragraph has a series of clausal statements that require a specific order to be meaningful and coherent because the information contained in the paragraph is organized logically.

Newkirk's (1989) analyses of children's non-narrative writing revealed some interesting differences. The predominant forms used by first graders were the label (41%), the attribute series (21%), the couplet (18%), and the unordered paragraph (15%). The forms used most often by second graders were the unordered paragraph (32%), the attribute series (26%), the couplet (19%), and the label (10%). The predominant forms used by third graders were the unordered paragraph (29%), the ordered paragraph (20%), the hierarchical attribute series (14%), the couplet (11%), and the reason list (11%). Newkirk noted that his data suggested an emerging hierarchical organization both within and across paragraphs.

In a longitudinal study with a quasi-experimental design, Zecker (1996) investigated how kindergarten and first-grade children wrote in three different genres (story, personal letter to a friend, and grocery list) at three different times during the school year (autumn, winter, spring). Descriptive statistical comparisons were conducted to investigate the extent to which children's texts adhered to the conventions for content and form typical of each of the three genres under study.

Zecker found, among other things, that both kindergartners and first graders demonstrated a considerable amount of knowledge about all three text types and the substantive and structural differences among them. There was a steady increase across the year in the number of kindergartners' stories judged to have a fundamentally narrative structure (58% in the autumn; 70% in the winter; 85% in the spring). In contrast, first graders' stories did not demonstrate this linear trend toward increasingly well-formed narrative structures across time (55% in the autumn; 75% in the winter; 50% in the spring), which Zecker attributed to the fact that children had been reading and studying *all about books* in the spring.

Kindergartners also showed a steady increase in the extent to which their personal letters embodied the content and structural characteristics typical of personal letters (68% in the autumn; 80% in the winter; 85% in the spring). Nearly all first graders at all three times during the school year produced personal letters that adhered both in form and content to typical personal letters (95% in the autumn; 100% in the winter; 100% in the spring).

Most kindergartners at all three times during the school year produced well-formed grocery lists, which were defined as inventories or series of semantically organized items related to the procurement of the ingredients to some recipe (95% in the autumn; 100% in the winter; 100% in the spring). Results were almost identical for first-grade children (100% in the autumn; 100% in the winter; 100% in the spring). However, compared to kindergartners, many more first-grade children provided Prefaces to their lists (e.g., "To make a good fruit salad you need" or "What I would buy for a ham sandwich"). More first-grade children also appended Afterwards to their grocery lists (e.g., "That's what I would put in my sandwich").

Deploying naturalistic research methods and a multiple case-study design, Chapman (1994, 1995) examined the writing of six children of varying ability levels over the course of their entire first-grade year. Using the analytic schemes developed by Langer (1986, 1992) and Newkirk (1989), Chapman reported the use by these children of 15 distinct genres: basic records, expanded records, basic record series, expanded record series, recounts, narratives, labels, lists, attribute series, couplets, hierarchical attribute series, word play, notes/letters, written dialogues, and picture dialogues replete with sound effects. Only eight of these genres showed up during the first third of the school year, with the other seven being added during the second two thirds. Chapman also reported that children produced mostly single-word and single-clause texts early in the school year. Most of these short texts were either labels or basic records. As the year progressed, however, both the length and structural complexity of children's texts increased. Additionally, Chapman noted that only the more middle-ability and advanced-ability children produced well-formed narratives, and that these narratives were typically produced late in the school year. Summarizing these findings, although all children showed development both in the number of genres enacted and the relative sophistication of their texts, their progress was irregular and uneven. Moreover, Chapman noted that some of this "bumpiness" seemed to be related to children's differential exposure to the set of textual resources of the classroom and children's specific socialization experiences within particular literacy events (e.g., sharing time, author's circle).

Although anecdotes abound (e.g., Bauman, 1982; Brady & Eckhardt, 1975; Chukovsky, 1968; Labov, 1972), very little systematic research has been conducted on children's poetic language development, especially with respect to their poetic writing. In reviewing the literature, I found only two systematic studies of children's poetry development. One focused on children's production of poetic language in the oral mode. The other focused on children's concepts for poetry.

Combining observational and experimental methods, Dowker (1989) documented the presence of the rhyme and alliteration in the oral poems produced by 133 two-year-old through six-year-old British children from diverse social, cultural, and economic backgrounds. Fifty-eight percent of these children produced at least one poem (defined as a text with an obvious rhythmical structure). Fifty percent of children under age 3;6, and 67% of children over that age produced poems. Most children produced only one or two poems. A few children were incredibly prolific and produced dozens of poems. Rhyme occurred in 41% of the poems. Alliteration occurred in 24% of the poems. There were no significant differences as a function of age. Dowker's work suggests that children's poetic sensibilities develop long before they go to school, where it may be cultivated, ignored, or stifled.

In an interesting intervention study, Ford (1987) investigated the concepts of poetry held by 340 kindergarten through third-grade children. The intervention consisted of having teachers read and discuss poems with children on a daily basis for four weeks. Pre-test results showed that the primary defining features of poetry held by children were rhyme, text length, and thematic content. Only 39% of children defined poetry as language containing poetic devices, and rhyme was virtually the only device mentioned. Older children mentioned rhyme as part of their definitions significantly more often than younger children. Third-grade was a watershed in this regard. Compared to pre-test results, a significantly larger number of children defined poetic texts according to rhyme on the post-test. Some children also mentioned other poetic devices. This difference was more pronounced for older children than for younger children. Again, third grade was a developmental watershed.

This focused review of research on the development of children's genre knowledge and its application to writing suggests that these processes are complex, emergent, and not particularly well understood. The present study is important because it builds upon and extends previous research in several ways. First, it is unique in its systematic investigation of three key school-based genres: stories, science reports, and poems. Second, in comparison with more naturalistic studies (e.g., Kroll, 1990; Newkirk, 1989), my quasi-experimental research design allowed a more systematic investigation of children's developing competence with narrative and informational genres. I created situations for children that allowed them to demonstrate skills that they might not have revealed if I simply waited for them to occur spontaneously. Moreover, my tasks were relatively standardized to allow for comparisons along the same dimensions for all children. Third, in comparison with highly scaffolded reenactment studies (e.g., Hicks, 1990; Pappas, 1991, 1993), my quasi-experimental design allowed me to document children's understanding and use of different genres in writing situations that are more typical of school—ones in which children are asked to produce "their own" texts. Fourth, this is the first study of which I am aware to investigate systematically (and not just anecdotally) children's knowledge and use of poetic writing. Finally, this study explored the possible relations between children's literacy diets and their working knowledge of different genres more systematically than virtually all previous studies of children's genre development (e.g., Chapman, 1994, 1995; Kroll, 1990; Newkirk, 1989; Zecker, 1996).

Method

Setting and Participants

This study was conducted in one intact classroom at each of three grade levels (kindergarten, first, and second grade) in one school. Both the first-grade and the second-grade programs met for the entire school day. The kindergarten program occupied the morning only. Approximately 80% of the children from each classroom participated in the study: 16 kindergarten children (9 boys, 7 girls; mean age = 5;8), 20 first-grade children (9 boys, 11 girls; mean age = 6;9), and 18 second-grade children (8 boys, 10 girls; mean age = 7;7). Four children did not participate because their parents either failed to return permission slips or declined to allow their children to participate in the study. I excluded from the sample all children who were either non-native speakers of English or recipients of Title I services.

All three classrooms were racially/culturally and socially/economically diverse and reflected the population of the community at large. Fifty-nine percent of the children in the study were Caucasian; 28% of the children were African American; 13% of the children were Asian or Asian American. About half of the children were from working-class families; the other half were from middle-class families. These distributions were quite similar across classrooms and closely mirrored those of the school population as a whole.

Although obviously not clones of one another, all three of the teachers in the study exhibited many similarities. All were advocates of a "whole language" approach to language arts instruction. All were actively involved in writing the "new" elementary language arts curricula and assessment protocol for the district. All three teachers organized their instruction according to an integrated language arts model (Pappas, Kiefer, & Levstik, 1995), which involves incorporating reading and writing activities into instruction related to all (or most) of the content areas according to themes that change every month or so. Active engagement with trade books was the staple of reading instruction in all classrooms. Children in all classrooms also engaged in some kind of writing activity nearly every day. Much of this writing was self-selected. When writing activities were assigned, these activities remained relatively open-ended. Included in the writing activities of each classroom was journal writing, which occurred almost every day. All forms of writing (e.g., drawing, scribble, non-phonetic letter strings, invented spelling, conventional spelling) were honored and accepted in all three classrooms. However, except to add illustrations to their otherwise phonetic-based texts, first-grade and second-grade children seldom composed with anything but invented spelling and conventional spelling.

Despite the fact that all three teachers shared many theoretical views and everyday classroom practices, certain literacy activities were relatively unique to each of the classrooms, especially with respect to "skills" instruction. In large part, these differences related to the fact that the teachers taught at different grade levels. The district curricula, although more developmental than normative in character, did specify different outcome goals for different grades.

In the kindergarten classroom, phonics was taught quite regularly but indirectly in the context of songs, games, and storybook reading. Children also talked about the content and themes of some of the books read during language arts instruction. On a rotating basis, three children per day made presentations to their classmates in a "sharing time" activity. On several occasions during the year, all children composed their own *books* based on the content and styles of published books that they had read in the context of shared reading activities. These compositions included a book based on *Dr. Seuss's ABC* (1963), a book based on the story *The Gingerbread Man* (Nolte, 1961), and a book based on one of each child's current favorite stories. Children were actively encouraged to write with any forms of writing they chose (e.g., drawing, scribbling, alphabetic writing).

In the first-grade classroom, children received instruction in phonics for fifteen minutes several times a week using The Phonovisual Method (Schoolfield & Timberlake, 1970). Children also engaged in shared reading experiences, which often involved teacher-led comprehension activities. The teacher also conducted instructional conversations (Tharp & Gallimore, 1988) with the children about punctuation, capitalization, and other aspects of grammar and usage during the second half of the year and in the context of preparing their writing for public display. Much like in the kindergarten classroom, all children composed several of their own *books* throughout the year. These books were modeled after the styles of published books that they had read. For example, children wrote their own books based on different predictable books such as Bill Martin's (1982) *Brown Bear, Brown Bear, What Do You See?* They also wrote their own books based on books from Arthur Loebel's *Frog and Toad* … series. Additionally, they wrote books based on several informational texts about fish that were used as part of the integrated language arts unit on animals.

In the second-grade classroom, children were responsible for learning spelling words and vocabulary words every week. They also engaged in reading comprehension activities during whole-class discussions and on their own using materials from the Mastery Education Corporation's *Insights*. Throughout the year, second graders also kept reading logs and wrote book reports on books of their own choosing on a fairly regular basis. Every day, just before lunch, all children who desired to do so shared favorite jokes and riddles with the other members of their class in a "sharing time" format. In the autumn of the school year, all children read and discussed several poems and then wrote a couple of poems of their own. They also wrote a biography of a famous person and a short social studies report about a Native American cultural group. For about a month during the winter of the school year, all children kept a science journal on a pair of mice and their offspring, all of which were classroom pets.

Almost no formalized explicit instruction about any of the genres under investigation was part of the language arts curriculum in any of the classrooms. However, all teachers occasionally engaged children in discussions of some of the characteristic features of different types of texts. As I mentioned above, children constructed texts of various genres based on ones that they had read during shared reading experiences.

Materials and Procedures

All data were collected in the spring of the school year. All data collection sessions were conducted by an adult researcher who had worked in the classrooms as a participant-observer all year and was well known to the children. In each of three separate writing sessions conducted by the same adult researcher, each child was asked to make up and compose one of three written texts designed to instantiate one of the focal genres (i.e., story, science report, poem). Across the three writing sessions, each child composed a total of three texts—one text representing each focal genre.

The elicitation instructions used for all three genre sessions were exactly parallel in structure and differed only in terms of their introductions and the task requirements they specified. To insure that they were relatively felicitous, task introductions differed as a function of what other tasks children had already completed. Task requirements differed only with respect to changes in the genre specified. Each of the three writing sessions occurred on a different day. Task condition was counter balanced. The time lag between the execution of any two tasks with any given child was never less than 3 days or more than 5 days. Task sessions were modeled after those of Sulzby (e.g., Sulzby, Barnhart, & Hieshima, 1989). During each writing session, each child worked individually with an adult examiner in a quiet spot in the hallway adjacent to her or his classroom. After providing the instructions for each writing task, no further information was provided about task requirements, editing, or revising. Each text was produced within a single session of approximately 20-30 minutes. Each child was asked to read her/his text after she/he had finished writing it. Each child was then asked to talk about the kind of text she/he had written and where she/he had gotten the ideas for it. Finally, each child was asked to read the text "one more time before you go back to the classroom." All writing sessions were audio taped, and transcriptions of all audio tapes were made.

Neither the examiner nor anyone else assisted in the production tasks. The topic about which the children wrote was the same across the three writing tasks. All children wrote their stories, biology reports, and poems about animals. This general topic was chosen because it had been the thematic focus of classroom instruction just before data collection. Children had received instruction and engaged in a variety of activities that focused on different classes of animals, animal habitats, animal life cycles, and pets. Some topics were emphasized more by some teachers; other topics were emphasized more by other teachers. Texts representing many different genres—including stories, poems, and information books—had been included in reading activities and talked about in discussions. Additionally, children had also engaged in self-selected and assigned writing that included numerous genres.

Contextual data on children's experiences with different genres were collected during the four months (January through April) prior to collecting writing samples. I kept records of all assigned and self-selected reading and writing done by children in the classroom. I also conducted observations in all classrooms to document the metadiscourse used by teachers in relation to the three focal genres. Children and their parents kept records of the books that children read (or had read to them) at home and the writing that children did at home. Finally I conducted interviews with children that focused on their sources of knowledge for different genres (e.g., Where do you usually learn about science and science books?).

Textual Features Included in Analyses

There are numerous dimensions of textual organization that could be analyzed to understand children's genre development. Based on previous theory and research, I selected a subset of dimensions that met three criteria. First, they were simple and salient ones that children were beginning to understand, analyze, and use. This criterion is particularly important in a developmental study. Second, these dimensions were distributed differentially across different genres in relatively unambiguous ways. Third, these dimensions represented different levels of textual organization: text structure, text cohesion, and text register. Descriptions and explanations of the forms and functions of these dimensions and the features that constitute them appear below.

Text structure. Texts may be characterized according to the overall hierarchical organization of clauses within them (e.g., Schank & Abelson, 1977; vanDijk & Kintsch, 1983). All texts have both surface structures and underlying structures. The underlying structures of texts are abstract representations of the information contained both explicitly and implicitly in the texts. The surface structures represent particular embodiments of the underlying structures. All text types or genres have a set of principles describing conventional and acceptable underlying structures. Although a given underlying structure can be transformed into many different surface structure variations, the surface structures of all relatively conventional generic texts index their underlying structures. In general, the organization of ideas in different text types is slightly different in terms of the kinds of linguistic and discursive elements included, the relative frequencies of these elements, and the hierarchical organization of the elements.

Because of its balanced focus on both formal and functional aspects of communicative activity, I will use the story grammar developed by Hasan (1989) to illustrate what is meant by structural aspects of narrative. Hasan has argued that there are basic elements that must be present in a text for it to be a story. She refers to these as obligatory elements. In addition to these, there are optional elements that may or may not be in stories or that may be characteristic of certain kinds of stories only. The following list shows the elements of a story and how they are typically organized:

Placement: The author may introduce the setting of the story and the characters, provide some locale or historical reference, describe traits or typical activities and attitudes of characters, and so on. (Optional)

Initiating Event: The conflict or problem in the story emerges. (Obligatory)

Sequent Event: A recounting of the character(s') attempts to resolve the problem or conflict. (Obligatory)

Final Event: The conflict or problem is resolved or not resolved. (Obligatory)

Finale: A restoration of the habitual or normal state of affairs or the establishment of a new and usually better state of affairs. (Optional)

Moral: A moral statement or claim is made. (Optional)

These structural elements and this structural organization are related to how stories function in our culture (and most cultures for that matter). Stories function to cultivate personal and interpersonal understandings—what motivates characters, how different characters interact, how their goals and plans to accomplish those goals mesh or conflict, and so on. Narrative genres shape their messages so that inferences about human (and other animate) beliefs, attitudes, motivations, purposes, and the like can be expressed. And they do this largely through the inclusion and hierarchical organization of the structural elements just discussed—the elements and structures that have come to characterize the narrative genre.

In contrast to narrative genres, informational genres do not involve specific characters, goals, motivations, etc. Rather, they involve describing characteristics and behaviors predicated on a particular event or set of events, class of objects, or class of agents. As a result of this different set of intentions, they have different global structures. Although not nearly as well theorized and researched, a number of investigators have explored the structural aspects of informational writing (Langer, 1986; Meyer, 1975; Pappas, 1991, 1993). Because of its balanced focus on both formal and functional aspects of communicative activity, I will use the text grammar developed by Pappas to illustrate what is meant by structural aspects of information reports. Like Hasan's text grammar for stories, Pappas' text grammar for information reports has both obligatory and optional elements. Below is an outline and a set of descriptions for these elements:

Topic Presentation: The topic or theme of the text is presented or introduced. (Obligatory)

Description of Attributes: A description of the attributes of the class or topic of the text is presented and elaborated. (Obligatory)

Characteristic Events: Characteristic events, activities, or processes related to the topic are expressed, discussed, or explained. (Obligatory)

Category Comparisons: Comparisons and contrasts about different members of the class or topic that the text is about are presented and explained. Sometimes comparisons or contrasts to other related topics or classes are introduced. (Optional but common)

Final Summary: Summary statements are made about the information covered in the text. (Optional but common)

Afterword: Extra information about the topic or theme is presented. (Optional)

Operating together, these structural elements function to introduce, describe, and elaborate upon characteristics and behaviors predicated on a particular event or set of events, a class of objects, or a class of agents. They render a sense of the factual, the general, and the universal, and they do so in a matter-of-fact manner. Unlike stories, which encourage the reader to infer intentions, motives, attitudes, and feelings on the part of agents, actions, and patients, information reports encourage an objective view of these text elements and what they represent.

Discussing the structure of poetry is more difficult than discussing the structures of narratives or informational texts. Certain forms of poetry must adhere to strict text grammatical rules for verse structure, rhyme, and meter. Other forms of poetry, however, have no presupposed text grammatical rules, although it is often possible through literary analysis to discover (or perhaps construct) the architecture of a given poem after the fact. To my knowledge, no general set or sets of structural descriptions have been written for poetry that are comparable to the kinds of text grammars created for stories and informational texts. Moreover, separating textural aspects of poems from structural aspects is more difficult than separating them for stories or information reports.

Nevertheless, three structural features are frequently mentioned by theorists of poetic language (e.g., Friedrich, 1979, 1986; Tannen, 1989). These are *line structure*, *stanza structure*, and *meter*. Line structure refers to the fact that the fundamental organizational unit of poems is the line rather than the sentence. For example, sentences within poems are often broken up into two or more lines in order to achieve particular rhetorical and aesthetic effects. A second fundamental structural feature of poems is stanza structure. Lines within poems are typically organized into stanzas rather than paragraphs. Much like lines, stanzas tend to mark the content within them as both distinct from and related to that of adjacent stanzas. A third structural feature that tends to characterize most poems is meter (or rhythm). Indeed, many have argued that meter is the master trope of poetic discourse. Basically, meter refers to patterns of measured sound units that recur in fairly regular ways.

I already mentioned that the structural features of stories foreground the intentions, motives, and feelings of characters while the structural features of informational texts foreground factual, general, and universal aspects of a natural or cultural process. In contrast, the structural features of poems function primarily to involve the reader in both the medium (language) and the message (content) of the poem. These features draw attention to the poetic text as an aesthetic object, and they help the reader imaginatively participate in the textually rendered world of the poet, thus forging connections between their experiences.

Text cohesion. Cohesion is a complex linguistic phenomenon that indexes both the relative particularity and generality of textually rendered topics and themes, as well as the degree to which agents, patients, attributes, locations, or activities are connected across stretches of extended discourse. Halliday and Hasan (1989) have argued for three distinct kinds of cohesive devices (co-reference, co-classification, and co-extension), and they have articulated many of the ways in which the differential use of these devices relates to genre. Co-reference is a linguistically articulated semantic relationship of situational identity of reference. Co-referential ties connect tokens that refer to the same particular entities, attributes, or activities across textual space (e.g., *Barbra Streisand* is a popular *female vocalist*. *She* is famous for *her* exquisite and powerful voice and for *her* skill as an *actor* and *film director*.).

The second kind of cohesive device posited by Halliday and Hasan is co-classification, which may be defined as a linguistically articulated semantic relationship wherein the things, processes, and circumstances are characteristic of all members that belong to a certain class or category. Co-classification ties, then, link either general tokens or different tokens of superordinate categories because of their identical relationships to those categories (e.g., *Lions* are *carnivorous mammals who* live in Africa and southern Asia. *They* are also exhibited in captivity at zoos and in circuses.).

The third kind of cohesive device articulated by Halliday and Hasan (1989) is co-extension, which may be defined as a linguistically articulated semantic relationship wherein two tokens refer to something within the same general field of meaning. Relationships of co-extension, then, connect tokens that exhibit a general resemblance even though their primary class affiliations are not identical (e.g., "I had a little nut tree / Nothing would it bear / But a *silver* nutmeg / And a *golden* pear") (p. 73).

These different cohesive relations are not independent of lexical and grammatical forms. For example, relations of co-referentiality are typically realized by pronominals, definite articles linked to individual nouns, demonstrative determiners, and possessives. By contrast, co-classification relations are usually realized by nominal and verbal repetition, substitution, and ellipsis. Finally, variation in these different kinds of cohesive devices and the particular lexical and grammatical forms that constitute them is often genre-related. For example, stories tend to contain an abundance of co-referential chains composed of nouns (especially pronouns) that allow the reader to maintain an understanding of a particular referent—a character, place, or object. Information books, by comparison, have relatively few co-referential chains. Rather, they contain co-classification chains that specify continued reference to classes of objects or living things. Poems, to provide a further comparison, may embody co-referential chains, co-classification chains, or a combination of the two in cases where they forge connections between the more particular and the more universal. Additionally, in comparison with stories and reports, poems are more likely to contain co-extension chains.

Text register. Because of their different functions and contexts of use, particular kinds of texts are distinguished by different linguistic registers, each with specific forms of lexis, syntax, and formulaic phrasing (e.g., Berman et al., 1986; Biber, 1988; Hasan, 1989). For example, phrases such as "once" or "once upon a time," "in a galaxy far far away" or "there was a girl who lived in the woods," and "the end" are found almost exclusively in stories and tales. Such phrases, which I refer to as *specialized narrative discourse*, typically function both to mark texts as narratives and to place textual events in the past.

Scientific lexical items and phrases (e.g., gills, respiration, carnivorous, osprey, bear live babies, have many rows of teeth) are more common to scientific (biological) texts than narrative or poetic ones. Such forms of discourse, which I refer to as *biological lexis and phrasing*, foreground the timeless and universal nature of the attributes and events to which they refer.

Poetic devices or *tropes* foreground the aesthetic or poetic quality of texts. Tropes typically violate conventional or unmarked phonological, syntactic, and semantic rules or expectations, thus intensifying the form of linguistic messages (Berman et al., 1986; Friedrich, 1979; Tannen, 1989). Well-known examples of poetic tropes include rhyme, repetition, assonance, alliteration, imagery, simile, and metaphor. Different tropes operate at different levels of linguistic organization. Assonance and alliteration, for example, operate primarily at the level of sound. Repetition operates at the level of syntax. Metaphor and simile operate at the level of semantics. And rhyme operates simultaneously at the levels of sound and syntax. These and other tropes tend to be extremely common in poetry, somewhat common in narratives, and much less common in expository prose.

Coding and Analyses

Based on the general distribution patterns of various textural and structural features across different genres, I first analyzed all texts descriptively to get a sense of the character and range of the texts in the corpus. I examined all analyses for major patterns within the corpus, and I selected analyses of a subset of texts to represent most of these major patterns.

To provide a more systematic account of the distribution of linguistic features across different genres and as a function of grade, all texts were coded and analyzed for the features of text structure, text cohesion, and text register described above. As I already mentioned, all first-grade and second-grade children composed their texts using readable invented spelling or conventional orthography. Some kindergartners, however, wrote their texts using non-phonetic writing systems (e.g., drawing, scribble, non-phonetic letter strings). When children composed texts with invented spelling and conventional orthography, I used their actual texts for analysis. When children composed texts with non-phonetic writing systems, I used children's readings of those texts for analysis.

Following Berman et al. (1986), I segmented children's texts into clauses. A clause is any stretch of extended discourse containing a verb phrase (including elided verb phrases). I then coded all texts for the features of text structure, text cohesion, and text register previously described. A second researcher, who was an advanced graduate student, also coded all texts. For features that were continuous variables, we coded all tokens of feature types and computed ratios of tokens per clause. For features that were dichotomous variables, we coded all texts for the presence or absence of relevant features and computed mean percentages of features present per text. Using 25% of the coded data and Cohen's Kappa as a measure, inter-judge agreement for coding all features was 0.94.

Because certain dependent variables were correlated with others, I grouped variables into three logical sets (text structure, text cohesion, and text register). These sets were analyzed using the Multivariate Analysis of Variance (MANOVA) program of SPSSx advanced statistical software package. For these analyses, grade and gender were between-subjects independent variables; genre was a within-subjects independent variable. Univariate repeated measures Analyses of Variance (ANOVA) were then conducted on all dependent variables that produced significant main and/or interaction effects in the MANOVAs. Because there were no main effects or interactions involving gender, this independent variable was not included in the univariate analyses. This tiered approach to data analysis provided some protection against Type I errors.

Scheffé post hoc comparisons were conducted for the between-subjects main effect (i.e., grade). Paired contrasts, using one-way analyses of variance, were conducted for the within-subjects main effect (i.e., genre). When interactions occurred, one-way analyses of variance with Scheffé post hoc comparisons were conducted to determine grade-level differences within each genre. Additionally, paired contrasts, using one-way analyses of variance, were conducted to determine genre differences within each individual grade. Significance levels for all post hoc analyses were set at .017, which is recommended according to the Bonferroni adjustment for independent variables with three levels.

I analyzed the contextual data on children's literacy diets and experiences using either descriptive or inferential statistics. Inferential statistical analyses were conducted on data concerning children's reading practices at home. Descriptive statistical analyses were conducted to determine the distributions of the kinds of books read by children in relation to school tasks, the kinds of texts written by children in relation to school tasks, and the kinds of discourse teachers used in relation to different types of texts. Descriptive statistical analyses were also conducted on children's interview responses to questions about where they typically learned about, produced, or consumed the focal genres.

Results and Discussion

Descriptive Analyses of Children's Texts

In the following several pages, I will analyze a subset of children's texts to demonstrate the range and the flavor of texts produced within this study. In doing so, I will present one of the most prototypic examples of each text type, one of the most atypical examples of each text type, and an example of a hybrid or blurred genre that was produced in relation to the request to write each type of text. The examples of hybrid or blurred genres are all ones that seem to suggest or capture children's inchoate and/or coalescing genre categories rather than children's intentional efforts to push the limits of genre boundaries. As such, they provide important insights into the development of genre categories for some children.

Stories. Most of the children in the study produced prototypic stories in response to the request to write a story. Table 1 shows an example of such a text written by David, a second-grade child. David's text has the basic look and sound of a story. Thematically, it is about life's vicissitudes, and it outlines the contours of an individual character's desires, needs, goals, and social conduct. David's story centers around perplexing and non-canonical events and attempts to re-establish the canonical balance of things (Bruner, 1986). David's story is also written in the language and style typical of narrative genres. The text is organized temporally. It is cast in the past tense. Cohesion is built through co-reference. The text incorporates all of the structural elements that are obligatory in stories (initiating event, sequent event(s), final event), as well as a number of other optional elements (e.g., placement, felicitous character introduction, finale). David's story also includes some reported speech marked by dialogue carriers and quotation marks, features which are not always common in the texts of early elementary school children. Also worth noting are the genre transformations David enacted to create his story. The original source for many of his ideas was a Discovery Channel documentary on serval cats. Like most such documentaries, this one had some narrative qualities. However, most of its discourse tex-

Table 1 David's Story (Typed Facsimile of Child's Text)

One day a Serval cat was born but, he wasn't as smart as the rest. As he was growing up he lerned evey thing but to hide his food up in the trees. If They didn't hide there food the Hyenas will steal it. His friends Had to share there food whith him. After a few weaks they got tired of it. The kept on telling him over, over, to hid his food up in the tree. But he always forgot. So They all thought of sending Him of to a place where there are no Hyenas. So they biult him a tree house. They put a giant leave for the roof. And luckely He had cable so he could watch the The Discovery chanel. And he lerned a lot about him self. Then one day a thunder storm came And wrecked his house. But he hadn't herd any thing about Hyinas when he was watching the chanel, and his house was ruyned. So they all got together again. But this time they desided to write the derections for hideing his food up in trees on his paws. It worked for one day. The next day he took a bath. It washd of. he went up to his friends And Said "Kowabanga my print washed of." So the rest of the Serval cats put there heads together And thought of a better solution. So they sent him to a island. Things where fine for a while. But the hyenas found crockadile dundies bout. They toaed themselves to The island And stole the Servals food. So The Serval Cats decided for him to go fallow a pack of elephant's so The hyeniys won't steale his food. He followed the elephant's for tow weeks. Then one nihgt the elephant's went to go and get a drink at the water hole. The next day The Serval Cat hunted And was Lucky. Because He didn't forget to put his food in Trees. The next day He forgot. And the Hyenays got it Again. So The Serval cat started wondering Through the plains. After 3 days he Found his pal Sand cat. They decided to Live together and help each other.

ture and structure was informational in character. David seemed to construct his story by appropriating relevant information from the documentary, ideas from other popular cultural resources (e.g., *Crocodile Dundee*, *Teenage Mutant Ninja Turtles*), and activities and events from his own life (e.g., watching lots of cable television). Importantly, he embedded these ideas and events from multiple domains of discourse practice into a rich and almost seamless narrative that contained no discursive intrusions from other genres.

In response to interview questions about why his text was a story and not some other genre, David replied, "Because it has a setting, a problem, and a solution. It's funny and exciting. It's also made up. Serval cats can't talk. Sand cats are not supposed to build houses. And hyenas aren't smart enough to tow themselves in a boat. It has the right words, too. Authors don't use wimpy words like 'take.' They use words like 'steal' instead." David's response suggests that he has developed considerable knowledge about story grammars. He also seems to use certain binary distinctions (e.g., fiction/non-fiction) to distinguish between certain text types. David seems to know that one function of stories is to entertain audiences. Finally, he has a keen sense of the kind of language used by "authors." In sum, David seems to possess considerable metadiscursive knowledge of many of the characteristics of good stories. And this metadiscursive knowledge doubtless contributed to his ability to produce such a prototypic and rhetorically powerful story. As an aside, I found that many children who produced such stories were also able to talk about their texts in reasonably sophisticated ways.

Table 2 Laura's Story (Child's Reading of Non-Phonetic Manuscript)

Fish and Caterpillar
The fish's name is Swimmy.
The caterpillar's name in Laura.
They are playing and eating.

Table 2 provides an example of an atypical story. This text was written by a kindergarten girl named Laura. In contrast to David's story, Laura's story exhibits few of the features typically associated with narrative discourse. It hardly is built around the vicissitudes of life. Its character's desires, motivations, and goals remain undeveloped. It does not unfold temporally. It is cast in the present tense rather than the past. It makes little use of cohesive devices of any kind. It does not contain any of the obligatory structural features of stories unless we consider "They are playing and eating" to be an initiating event. Except for the last clause, it reads much more like a list of facts than a temporally organized and related set of actions and events. The list-like quality of this story may have been due to the fact that Laura read her story from a drawing with no added print. In this regard, her reading resembled what Sulzby (1985) has referred to as "labeling and commenting" and "following the action." However, it is important to note that many other children who read their stories from drawings produced well-formed and often quite elaborate narratives.

When asked why her text was a story rather than a poem or an information report, Laura replied, "It doesn't have rhyming words plus stories don't have rhythm, and it doesn't have anything that you have to look up." What

Laura seemed to be saying here is that stories have neither rhyme nor meter nor information of the sort that you might find in a book such as an encyclopedia. Thus, she clearly has some knowledge of rhetorical and literary features. However, her sense of how this knowledge might be deployed to compose effective texts of different genres seems more nascent. Her emergent sense of the differential distributions of features across different genres may have been partially responsible for Laura's difficulty in producing a prototypic story.

Almost no hybrid or blurred genres were produced in response to the request to write a story. However, there were a few, one of which is represented in Table 3. This story was produced by a kindergarten child named Daniel, and it incorporates features typically associated with several different genres. It begins with the kind of formulaic opening typical of many children's narratives, but it quickly turns into a descriptive attribute series with elided verb phrases of the sort more commonly found in information books. Daniel also shifts back and forth between the past and present tenses, as well as between a specific bunny and bunnies as a class of animals. Finally, the final clause of his story has a certain poetic quality. In fact, Daniel mentioned that this clause was borrowed from a "peek-a-boo" book that he had. As it turns out, this book contains many rhyming words. In response to a question about why this text was a story and not a poem or an information report, Daniel simply said, "I don't know." He was no more loquacious with further probing.

Science reports. Although most children composed prototypic stories in response to the request to write stories, fewer children produced prototypic science reports, and quite a few children had difficulty instantiating this genre. Anne, a first grader, was one of the children who composed a very well-formed science report. Her text, which is shown in Table 4, provides an example of one of the better science reports produced by

Table 3 Daniel's Story (Child's Reading of Non-Phonetic Manuscript)

Once there was a bunny. A bunny has short ears, long feet, and no tail.
The bunny doesn't hop. He was a funny bunny.

Table 4 Anne's Science Report (Typed Facsimile of Child's Text)

Catopelers
Catopelers have eyes just like we do catopelers do not have bons like we do
catopelers have a mof [mouth] to eat les [leaves] with Thay hav to have these
or thay will die catopelers have nous [nose] to small [smell] with just like we do
catopelers have ers [ears] to her [hear] with just like we do catepelars don't
have long arms like we do thay don't have long legs just like we do catopelars
don't have big heds like we do
Catopelars do not make a coocoon thay make a charisales Thay stay insid
the Charisales for a long time And wen its redy to come out it terns into a but-
tefly A coocoon terns into a moth and a charisales terns into a buttefly
The end

the children in this study. Although it is not a structural masterpiece, Anne's report resembles the sort of text one might find in a children's animal encyclopedia or a science book for children. It is factually accurate. It contains many textural elements common to the information report genre (e.g., present-tense verbs, co-classification chains, and a biological register). Anne's text contains all of the structural elements that are obligatory in information reports (topic presentation, descriptions of attributes, characteristic events). It also has some very nice category comparisons (an optional but common structural element in reports). Although Anne ends her report with a formulaic element more typical of stories (The end), this feature does not really detract from the overall rhetorical effect of the text.

When asked why her text was a science report instead of some other type of text, Anne said, "Because it has a lot of true information. A lot of people don't know that a butterfly comes out of a chrysalis and not a cocoon." Although she only states it implicitly, Anne seems to understand the importance of scientific vocabulary and using it in a precise fashion. She certainly brought this knowledge to bear when she wrote her report. Anne also noted that "it's a lot longer than a poem, and it doesn't have a beat. A poem is like two or three lines." These comments suggest that Anne distinguishes different genres according to their relative lengths (and perhaps other formatting characteristics), as well as according to the differential distribution of discourse features such as meter.

A number of children, especially the younger ones in the study, responded to the request to produce science reports by composing texts that were more like stories than any other genre. Jon, a first grader, was one of these children. His science report appears in Table 5. Besides reading more like a story than a science report, Jon's composition contains many textural features typically found in stories (e.g., past-tense verbs, co-referential chains), as well as all three structural elements that are obligatory in stories (initiating event, sequent event, final event). Although somewhat understated, Jon's text also betrays some poetic qualities—a staccato-like meter and parallelism. Finally, Jon's text contains two structural elements that are obligatory in information reports (a topic presentation and a characteristic activity). However, because these elements follow and are in some ways predicated on Jon's narrative about a particular lion, it remains unclear whether Jon intended them to function as structural elements of a report or as an epilogue or ethically neutral moral to his story. Finally, even if we grant that these elements were intended as a topic introduction and a characteristic activity, Jon's text remains a narrative within

Table 5 Jon's Science Report (Typed Facsimile of Child's Text)

Lloyn [Lion] was very hugry [hungry]
Lloyn Kiled an anolop [antelope] and ate him
Then he went to sleep
Lloyn is King in the Jungo
Lloyn can run fast

which some science report features are embedded.

In response to the question about why his text was an information report rather than some other kind of text, Jon said: "This is the lion's story, and I wrote what a lion is and can do. These things are true." Later in the interview, Jon added that "this story can help people because they might go in the jungle, and if they don't know what a lion can do, they might get eaten up." Although these various comments are somewhat ambiguous, they do seem to indicate that Jon was struggling to sort out the differences between narrative and paradigmatic forms of thinking and communicating. For example, sometimes he seemed to refer to particular lions. Other times he seemed to refer to lions as a phylogenetic class. Similarly, he referred to his text both as a story and as true. Jon had apparently begun to think about how textual and rhetorical features are used to distinguish different genres, but his knowledge in this regard seemed emergent. Based on his interview responses, Jon seemed to know a tremendous amount about the forms and functions of the information book genre. Based on the text he produced, however, his sense of this genre appeared to be conflated with his sense of narrative genres.

A number of texts produced by children in response to the report-writing task (as well as the poem-writing task) combined linguistic features typical of several different genres and constituted texts that I view as hybrid genres. The genres from which the children borrowed linguistic features to create these hybrid genres included the three genres that were the focus of this study plus several others. Quite a few children produced texts that combined features from the requested genre with features more typical of stories. Several children imported features from genres not typically associated with school-based genres. One text of this sort was written by a kindergarten child, Denise. In response to the request to write a science report, Denise composed the text shown in Table 6.

The report begins much like an on-line event cast (Hicks, 1990), in which the narrator is telling the audience about an event that she is witnessing. Perhaps implicitly, an initiating event or problem is stated. Next, Denise provides a solution to the problem cast in a discourse style that seems to derive from a media advertisement, infomercial, or public service announcement. As I listened to Denise read her story, I almost expected to hear a pronouncement related to calling 911 or to hear even clearer echoes of intertextual links to relevant media messages. Indeed, Denise's report contains information that is useful for dealing with a particular sort of problem. However, neither this information nor the discourse style in which it is cast are typical of school-based science reports or even school-based information reports

Table 6 Denise's Science Report (Child's Reading of Non-Phonetic Manuscript)

There's a cat a dog out chasing each other on the lawn.
Call collect.
Start calling now if your cat and dog ever do this.
And please call this toll–free number.

more broadly conceived. Denise seems to have borrowed thematic and structural aspects from several genres related to the acquisition of useful information, but the blurred genre she has created is quite different from what most of us would call a science report.

When she was asked to justify classifying her text as a science report rather than some other kind of text, Denise told me, "Cause it's got numbers in it." Even with probing, she did not elaborate on this response. One may only guess exactly what she meant. She may have meant that certain numbers (e.g., toll-free ones) are valuable resources for specific types of information. Or she may have been operating with the more general knowledge that numbers figure prominently in many kinds of informational texts. Based on her relatively non-specific interview responses, however, I am inclined to think that Denise framed the task by activating her interdiscursive knowledge (Fairclough, 1992) of informational genres from popular culture (e.g., infomercials), which are somewhat distant cousins to the informational genres that are more typical of school-based discourses.

Poems. As was the case with information reports, some children produced remarkably sophisticated poems, while others had difficulty composing texts that instantiated this genre. Probably the most sophisticated poem in the corpus was written by Keisha, a second-grade child. Keisha took great pride in her "ways with words" (Heath, 1983). She wrote many stories and poems both at home and at school during the year in which this study was conducted. She also frequently sought out adult reactions to her writing. Keisha's poem appears as Table 7. Although rhyme was the primary feature of most children's poems, Keisha built her poem out of more subtle and complex literary tropes. She organized her poem according to a specific line structure, a sophisticated accomplishment for a child her age, or, indeed, for a child much older than she. She also constructed a meter pattern that is complex and pleasing to the ear. She used three similes in as many clauses. And she created rich patterns of assonance (like … white … shining) and alliteration (looks like). Finally, Keisha's poem evokes images more rich than those evoked in many published poems. These images are much like those described by Tannen (1989) and hailed as a primary feature of poetic language.

Table 7 Keisha's Poem (Typed Facsimile of Child's Text)

My fish has a body like a small piece
of gold.
And his eyes look like a white bulb
shining.
And his tail looks like a duck
swimming upside–down.

When asked why her text was a poem rather than a story or an information report, Keisha replied, "Poems can rhyme, but they don't have to, and this one doesn't rhyme. … But it has a beat, and it describes exactly what my fish looks like." Keisha's understanding and use of literary terms, as well as her sophisticated sense of the optional nature of rhyme in poetry, suggested that she possessed a wealth of explicit knowledge about poetic language and the poem as a distinct genre. While she did not produce precise literary language to describe the presence and function of imagery in her poem, Keisha was clearly aware of having created an imagistic text. Her explicit knowledge of poetic language and the verbal and visual organization of poems quite likely contributed significantly to Keisha's ability to produce her beautiful and prototypic poem.

Many children in the study generated texts that instantiated the poem genre reasonably well but which were not as exquisite as Keisha's. Most of these children composed poems that depended heavily on rhyme (often forced) and sing-song meter patterns for their poetic effects. Some children, however, had a difficult time with the poem-writing task. Like the children who had difficulty with the report-writing task, these children tended to produce texts that were more like stories than poems. Beth, a kindergartner, wrote a poem of this sort. Her text appears in Table 8. Although Beth admittedly borrowed some language and ideas from "The Three Little Kittens Who Lost Their Mittens" nursery rhyme to construct her poem, she seemed to expunge these borrowings of most of their poetic quality. Even the potential poetic effects of end rhyme (mittens—mittens, pie—pie) get all but erased by the way relevant lines are embedded within a basic narrative text. The same is true for the potential poetic effects of meter. Finally, this text does contain most of the textural and structural features typically found in narratives. For example, it focuses on life's exigencies—losing and finding important objects. It has a basic temporal framework. The text is cast in the past tense. Cohesion is achieved through co-referentiality throughout. And the text has all three structural elements that are obligatory in stories.

Beth talked incessantly while composing her text. One of the things she said was, "I have a book of poems at home. And I'm going to use the kitten and mittens poem and change the kittens to horses because I *love* horses." In response to a question about why her text was a poem rather than a story or an information book, Beth said, "Because it's make believe, and they can't really make apple pie or anything. They just meow and stuff, go outside and put mittens on and stuff. And it's short. Poems are short and stories are really long." Except perhaps for this issue of text length, most of Beth's textual justifications would seem to apply equally well to both stories and poems. Although she knew the names of different kinds of texts and recognized the book from which she got many of her ideas as a poetry book, she did not seem to know precisely how stories and poems are different from each other. In the absence of consolidated knowledge about

Table 8 Beth's Poem

Typed Facsimile of Child's Text	Gloss of Child's Text
WNTS A MOTHER HORS WAS	Once a mother horse was
MAKIN A APUL PI	making an apple pie
HER LITL FOLS LS THR MITI	Her little foals lost their mittens
THA TRID TO FIND EM N	They tried to find them
THA FUOND THR MITNS S	They found their mittens
THA HAD APOL PI	They had apple pie

the textures and structures of different text types, the story may have functioned as a default genre for Beth. Like Jon, she seemed to have some sense about how textual and rhetorical features vary across different genres, but this seemed inchoate and emergent. This assessment was partially supported by her response to the information report writing task. Although her information report was more prototypic of that genre than her poem, it, too, contained some narrative elements. Moreover, she claimed that it was an information report both because "it is real" and because "I like horses and I think my Mom will like to read my story."

Alan, a first-grade child, produced a hybrid genre in response to the request to write a poem. His text, which is displayed in Table 9, combines textural, structural, and rhetorical features from several different genres. Like many poems, Alan's poem embodies a defined meter, imagery, and the intensification of linguistic form through the repetition of words, phrases, and syntactic structures. Alan also seemed to pay some attention to the aesthetic effects of line structure as evidenced in his line breaks. Although he had plenty of room left on the page, Alan ended two lines out of eight with the word *and*, which urges the reader to move quickly to the next line. Despite these poetic qualities, Alan's text bears a strong family resemblance to information reports typically written for children. The present tense predominates. A biological register is evident. And the text contains two of the obligatory structural elements of information reports (characteristic activities, descriptions of attributes). Finally, Alan embeds a past personal narrative snippet into his poem (And I watched *Mother Earth*, and I saw monkeys. …). That Alan's "poem" exhibits these features should not be particularly surprising since the source of his text was a television documentary entitled *Mother Earth*. Like Alan's text and many television documentaries, this program is basically an information report embedded within a narrative (i.e., the "story" of Mother Earth).

When asked why his text was a poem rather than some other genre, Alan answered, "Because it helps you learn about animals, and I like animals." Later in the interview, he said, "It's also short. Stories are longer. And it's true. Stories aren't usually true." Alan's responses were interesting and complex. Moreover, they were as telling for what they left out as for what they included.

Table 9 Alan's Poem

Typed Facsimile of Child's Text	Gloss of Child's Text
grafs / eta / grss	Giraffes eat grass
peckoc haf Big wags	Peacocks have big wings
AnD Drnrs are estenct	And dinosaurs are extinct.
ELfint haf Big truk AnD	Elephants have big trunks and
Dlfin AnD Wels are ded	Dolphins and whales are dead
AnD I wocht Mothe Erth And	And I watched Mother Earth and
I sow mukkey AnD I sow hepos	I saw monkeys and I saw hippos
AnD mor AnD mor AnD mor	And more and more and more

To stress the teaching power and the veracity of his text seemed to betray the fact that he thought of it as informational in some way. He mentioned that stories are usually not true, but he never said that poems were true. In fact, his referent in this regard seemed to be the documentary that was the thematic source for his poem. The only unambiguous distinction he made was about the fact that stories tend to be longer than poems. But this distinction also holds up with respect to comparing typical children's stories with typical information books or encyclopedia entries written for children. Finally, Alan did not mention any of the poetic qualities of his text—meter, imagery, intensification of form, or line structure. It may have been that, although he had some working knowledge of poetry, which he used to compose a nascent poetic text, he did not yet have the metadiscursive tools typically used to talk about poems. It also may be the case that Alan actually knows more about poetry than he demonstrated in the production and interview tasks but that this knowledge was suppressed by the fact that he modeled his text after a "narrativized" informational television program.

Summary of Descriptive Analyses

These descriptive analyses highlight the major patterns that characterized the data set as a whole. There was a general tendency for the first-grade and second-grade children to produce more prototypic and rhetorically powerful stories, science reports, and poems than the kindergarten children. There was also a general tendency for children's science reports and poems to be less prototypic and less rhetorically effective than their stories. Finally, in cases where children's science reports and poems were atypical, these texts often exhibited narrative qualities. Notwithstanding these grade-related and genre-related tendencies, there was also considerable variation within each grade in children's instantiations of each genre. Some children in each grade produced sophisticated tokens of some (or all) genres. Some children at each grade level produced atypical (and usually low-level) tokens of some (or all) genres. And some children at each grade level produced tokens of some (or all) genres that were characterized as "hybrid genres" because they embodied characteristics typical of two or more different and reasonably distinct text types.

Quantitative Analyses of Children's Texts

Text Structure

I analyzed children's texts for the obligatory text-structural elements of stories, information reports, and poems described above. All texts, irrespective of the genre that they were supposed to instantiate, were analyzed for the presence of the obligatory text-structural elements of *all* three genres. Analyses were conducted in this way to determine not only whether particular texts were well-formed tokens of the target genres, but also whether there were any systematic patterns of overgeneralization across genres. Such patterns, when found, are extremely useful in constructing plausible accounts of children's emergent understanding of different genres and the relations among them.

Narrative text structure. All texts were coded for the presence or absence of the three obligatory narrative structural elements: initiating event, sequent event(s), and final event. Percentages of the obligatory narrative elements in each text were calculated. Mean percentages of these elements appear in Figure 1.

As this figure illustrates, children at all grade levels constructed relatively well-formed stories. The figure also suggests a somewhat complex pattern of findings with respect to the presence of narrative elements in science reports and poems. Analyses yielded a significant main effect for grade (*F* (2, 51) = 8.53, $p < .001$), a significant main effect for genre (*F* (2, 51) = 76.45, $p < .0001$), and a significant grade level-by-genre interaction (*F* (4, 51) = 3.84, $p < .01$). Post hoc analyses showed that the stories of children in all grades contained significantly more narrative structural elements than their science reports. Additionally, the stories of first-grade and second-grade children, but not kindergartners, contained significantly more narrative structural elements than their poems. As I have mentioned in relation to other features, kindergartners tended to overgeneralize story features, especially in their poems.

Information report text structure. Children's texts were coded for the presence or absence of each of the three obligatory structural elements of information reports: topic introduction, description(s) of attributes, characteristic events. Percentages of these obligatory elements were calculated. Mean percentages of the obligatory structural elements of information reports appear in Figure 2. Analyses revealed a significant main effect for grade (*F* (2, 51) = 19.49, $p < .001$), a significant main effect for genre (*F* (2, 51) = 51.60, $p < .0001$), and a significant grade-by-genre interaction (*F* (4, 51) = 3.17, $p < .05$). Post hoc analyses showed that the science reports of children at all grade levels contained significantly more structural elements typical of informational texts than either their stories or their poems. Additionally, the poems of first-grade and second-grade children contained significantly more structural elements typical of informational texts than their stories. When I looked more closely at these poems, it turned out that they often included topic presentations (usually in the form of a title) and/or rich sets of descriptions. Interestingly, these descriptions were quite different from the descriptions of attributes contained in science reports. In science reports, descriptions were typically lists of facts (e.g., Dogs have sharp teeth. Dogs have long noses.). In poems, descriptions often conjured up the sort of imagery that Tannen (1989) has argued is a centerpiece of poetic texts (e.g., My fish has a body like a small piece of gold. And

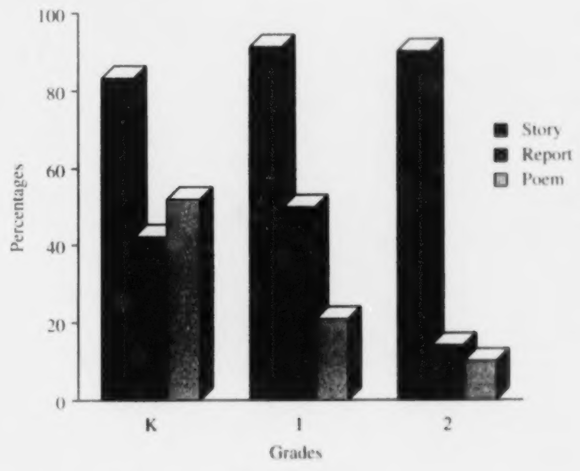

Figure 1: Narrative Structure

his eyes look like a white bulb shining.). Indeed, the poems that contained such rich sets of descriptions were among the best poems in the entire corpus. This finding suggests that Britton et al.'s (1975) distinction between transactional and poetic discourse may be somewhat artificial. Rather, it seems that certain linguistic forms may inhabit different kinds of texts but function in quite different ways.

Finally, within the science report genre, the texts of first-grade and second-grade children contained significantly more informational structural elements than the texts of kindergarten children. I was curious about the distributions of the three structural elements as a function of grade. More specifically, I wondered whether there was a random mix of these elements in the kindergartners' reports or whether the kindergartners were prone to include one or more specific elements more than any others. A further analysis of the kindergartners' reports revealed that the obligatory structural element that was most common in their reports was "characteristic events." A close examination of reports that contained "characteristic events" was enlightening. These reports also contained very high ratios of present-tense and present-progressive-tense verbs. These verbs were employed to narrate events within the children's texts (e.g., Super Bunny puts on his shoes; now he's jumping to the moon.). Sometimes the children also narrated the habitual events of particular characters in the present tense, modifying their verbs with adverbial intensifiers (e.g., Frog always eats his lunch before noon.). These narrations were often "read off" pictorial texts. In sum, while it makes sense that my coding procedures led me to code clauses in kindergartners' science reports as "characteristic events," these texts were not really reports. Rather, they were like event casts or online narrations (e.g., Hicks, 1990) or perhaps instances of "following the action" narrations (Sulzby, 1985).

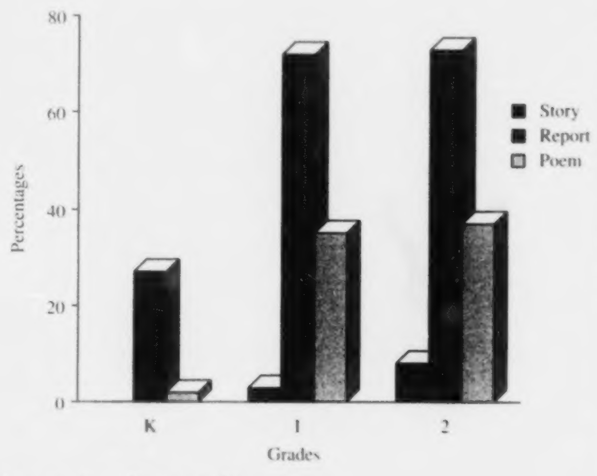

Figure 2: Report Structure

Poetic text structure. All texts were coded for the presence or absence of each of three structural elements considered to be extremely common though not necessarily obligatory in poems: distinct line structure, distinct stanza structure, and meter. Percentages of these elements per text were calculated. Mean percentages of obligatory structural elements of poems are shown in Figure 3. Analyses yielded a significant main effect for genre (F (2, 51) = 57.74, $p < .0001$) and a modest but significant grade-by-genre interaction (F (4, 51) = 3.29, $p < .05$). Post hoc analyses showed that the poems of children at all grade levels contained significantly more text-structural elements typical of poetic discourse than their science reports. Additionally, the poems of first-grade and second-grade children contained significantly more poetic structural elements than their stories. Within the poem genre, the texts of first-grade and second-grade children had significantly more structural elements typical of poetic discourse than the texts of kindergarten children. Finally, children's stories and science reports contained hardly any poetic structural elements.

Together, these findings suggest that, at least as early as kindergarten, children have developed some sense of poetry as a unique and intensified form of discourse. They also suggest that this sensitivity to poetic language and discourse continues to develop in the early elementary grades. Additionally, these findings show that these children did not use the text-structural organizational patterns typical of poetic discourse in their narrative or informational texts to any considerable degree. In other words, they did not seem to overgeneralize poetic forms to other kinds of texts.

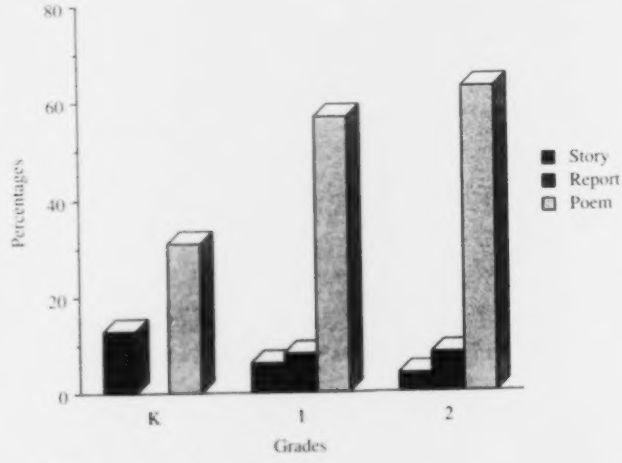

Figure 3: Poetic Structure

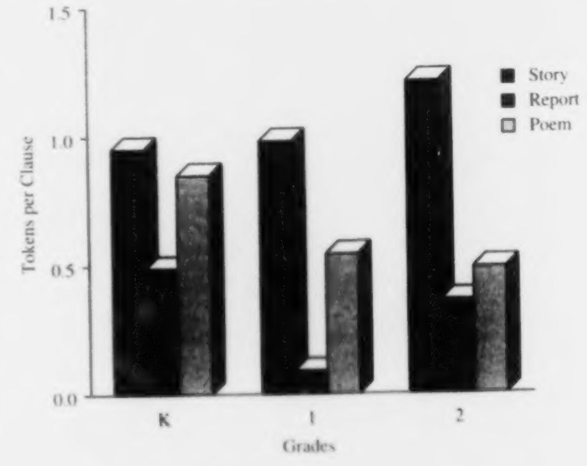

Figure 4: Co-reference

Text Cohesion

I analyzed all children's texts for the relative presence of tokens of co-reference, co-classification, and co-extension. There were so few instances of co-extension that analyses of these devices will not be discussed.

Co-reference. Mean ratios of tokens of co-reference per clause appear in Figure 4. Analyses revealed a significant main effect for genre (F (2, 51) = 52.60, $p < .0001$) and a significant grade level-by-genre interaction (F (4, 51) = 3.83, $p < .01$). The main effect for grade level also approached significance ($p < .06$). Post hoc analyses showed that children in all grades used co-reference to create cohesion significantly more in their stories than in their information reports. Such usage is consistent with cultural expectations. First-grade and second-grade children also used co-reference to create cohesion in their stories significantly more than in their poems. This result partially reflected the high ratios of co-referential tokens in the older children's stories—stories that were a good deal more complex and tightly woven than the stories of most kindergarten children. Finally, kindergarten and first-grade children, but not second-grade children, used co-reference to create cohesion significantly more in their poems than in their reports.

A close examination of Figure 4 discloses several other interesting patterns. First, there was a steady decrease across the grades in the use of co-referentiality as a means of creating textual cohesion in poems. This finding reflected two trends. First, children's poems became increasingly less story-like as a function of grade. Second, the thematic content of children's poems focused increasingly on classes of objects and experiences and universal themes, rather than on particular characters, actions, and events. Another pattern shown in Figure 4 is the reasonably high ratios of co-referential devices in all texts composed by kindergartners. As with other findings, this reflected the fact that kindergartners produced story-like texts in all conditions. Finally, Figure 4 shows that the science reports of second-grade children contained unexpectedly high ratios of co-referential devices. This finding related to the fact that a high percentage of second graders wrote reports about their pets.

Co-classification. Mean ratios of tokens of co-classification per clause are displayed in Figure 5. Analyses revealed a significant main effect for grade level (F (2, 51) = 8.63, $p < .001$), a significant main effect for genre (F (2, 51) = 42.17, $p < .0001$), and a significant grade level-by-genre interaction (F (4, 51) = 4.19, $p < .01$). Post hoc analyses showed that children at all grade levels used co-classification devices to create cohesion significantly more in their science reports than in either their stories or their poems. Additionally, first-grade and second-grade children, but not kindergartners, used co-classification devices significantly more in their poems than in their stories. Finally, within the science report genre, the texts of first-grade children contained significantly more co-classificatory tokens than the texts of kindergarten children.

In general, co-classification was almost never used to create cohesion within stories. However, it was used increasingly across the grade levels within children's science reports and poems. A close look at Figure 5 discloses some other interesting patterns. Within the science-report-writing task, where one would expect to find co-classification devices used, first graders used

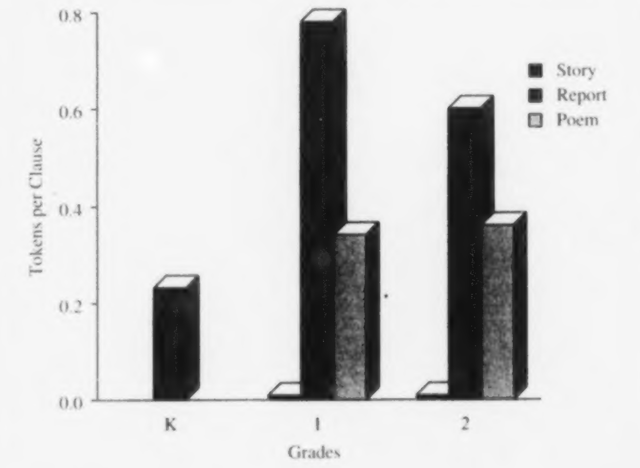

Figure 5: Co-classification

this cohesive device more than any other children. For kindergarten children, the relatively low ratios of co-classification tokens in their reports and their poems reflected the fact that many of these texts were story-like. As with co-referentiality, the relatively low ratio of co-classification tokens in second graders' information reports seemed an artifact of the fact that many of these children wrote reports about their pets. Finally, the relatively high ratios of co-classification tokens in the poems of first-grade and second-grade children reflected the fact that their poems focused increasingly on universal themes and classes of objects and experiences.

Narrative, Scientific, and Poetic Registers

I analyzed children's texts for three indexes of specialized language, which are distributed differentially across narrative, expository, and poetic texts, and each of which tends to predominate in only one of these genres. The indexes that I analyzed were "specialized narrative discourse," "biological wording and phrasing," and "poetic devices."

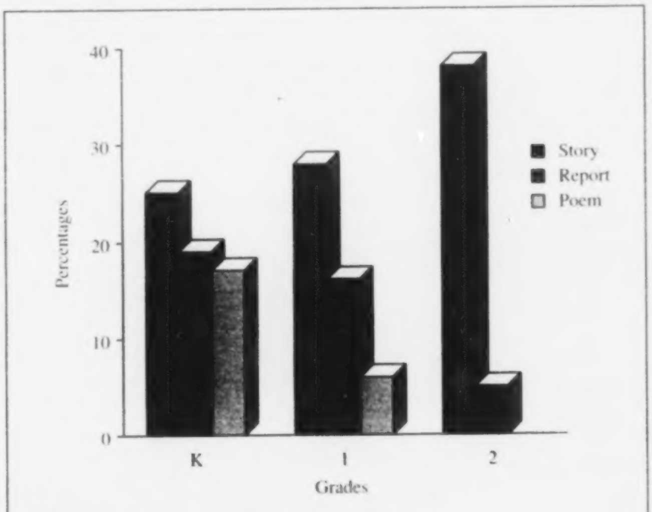

Figure 6: Narrative Register

Specialized narrative discourse. Using a dichotomous scale (0, 1), all texts were coded for the presence or absence of the kinds of openings, settings, and closings that are typically found in narratives. Mean percentages of the "specialized narrative discourse" were calculated by adding these scores together and dividing the sum by three. These percentages appear in Figure 6.

Analyses revealed a significant main effect for genre (*F* (2, 51) = 20.11, $p < .001$) and a significant grade level-by-genre interaction (*F* (4, 51) = 2.86, $p < .05$). Post hoc analyses showed no statistically significant differences in the percentages of specialized narrative discourse within kindergartners' stories, reports, and poems. However, the stories of first-grade and second-grade children contained significantly higher percentages of the specialized language of narratives than either their science reports or their poems. As illustrated in Figure 6, this pattern of results was more pronounced for the second-grade children than it was for the first-grade children, even though this grade-level difference was not statistically significant.

Qualitative analyses revealed yet more interesting differences. Most of the kindergartner's specialized narrative discourse consisted of formulaic openings and formulaic closings (80% of all tokens of specialized narrative discourse). In contrast, most of the specialized narrative discourse of first-grade and second-grade children consisted of explicit settings (67% of all tokens of specialized narrative discourse). This suggests not only that older children have a better sense of the relation between different registers and different discourse contexts, but also that they realize that certain features (e.g., settings) are more fundamental to good fictional narratives than other features (e.g., formulaic openings and closings). This difference may relate to the fact that stories with formulaic openings and closings (e.g., folktales, fables) are more common in the literacy experiences of younger children. In contrast, stories with well-developed settings are more common in trade books read by older children (e.g., juvenile chapter books).

Biological wording and phrasing. Based on Myers (1990) demonstration that biological wording and phrasing plays a central role in foregrounding the universality of scientific concepts and processes and backgrounding particular instantiations of these concepts and processes, this feature was chosen as an index of scientific register. Mean ratios of tokens of biological wording/phrasing per clause appear in Figure 7. Analyses revealed a significant main effect for genre, F (2, 51) = 26.95, $p < .0001$. Post hoc analyses on the main effect for genre demonstrated that children's science reports contained significantly more tokens of this feature than either their stories or their poems. As illustrated in Figure 7, this pattern of results was stronger for first-grade and second-grade children than it was for kindergartners. This may mean that first and second grade is a particularly sensitive developmental period for the increased understanding of the technical language of scientific texts.

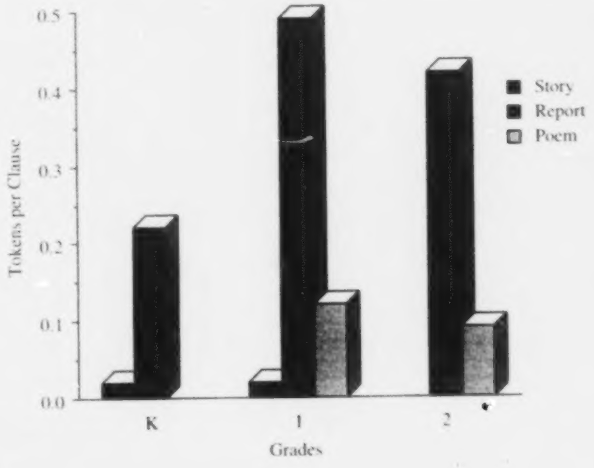

Figure 7: Scientific Register

Poetic devices. I coded children's texts for tokens per clause of five different poetic tropes: rhyme, assonance, alliteration, metaphor, and simile. I then created a summary score of "poetic devices" by summing these ratios. Mean ratios of tokens of poetic devices per clause are shown in Figure 8. Analyses of this measure revealed a significant main effect for genre only, F (2, 51) = 39.72, $p < .0001$. Post hoc analyses on this main effect showed that, irrespective of grade, children's poems contained significantly more tokens of poetic devices than either their stories or their science reports. A careful examination of Figure 8 also shows that, although there was not a significant main effect for grade or a genre-by-grade interaction, this pattern of results was exhibited more dramatically by first-grade and second-grade children than by kindergartners.

Individual analyses of poetic tropes revealed some other interesting differences. Although children's poems contained abundant instances of assonance, alliteration, and rhyme, they contained very few instances of metaphor and simile. This suggests that young children may be more sensitive to some aspects of poetic language (i.e., phonology and syntax) and less sensitive to others (i.e., semantics).

Children's Experiences With Different Genres

Because research in emergent literacy (e.g., Strickland & Morrow, 1989), whole language (e.g., Newman, 1985), and situated cognition (e.g., Lave & Wenger, 1991) has emphasized the critical roles of experience with texts and participation within literacy activities, I wanted to gain at least a partial sense of children's experiences with different discourse genres. To this end, I analyzed (a) the kinds of texts that children read at home, (b) the kinds of texts that children read as part of school instruction, (c) the kinds of writing that children were asked to do in school, (d) the explicit metadiscourse used by the children's teachers in relation to the three focal genres, and (e) children's self-reports about where they learned the forms and functions of different genres.

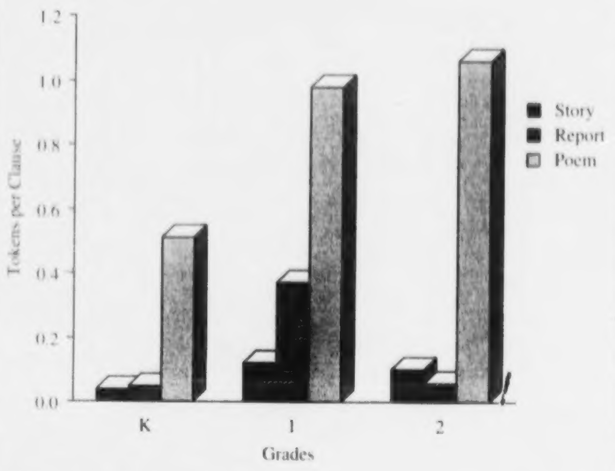

Figure 8: Poetic Register

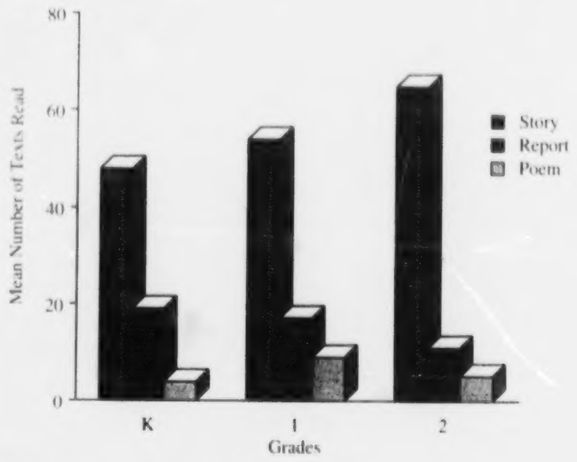

Figure 9: Texts Read at Home

Children's literary diets at home. Figure 9 graphically illustrates the mean numbers of stories or storybooks, science reports or science books, and poems or poetry books that the children claimed they had read (or had read to them) at home during a four-month period. As the figure shows, children at all grade levels read many more stories than either science reports/books or poems. Additionally, the gap between children's experience with narrative versus non-narrative genres increased across the grades.

A repeated measures ANOVA on this variable yielded a significant main effect for genre, $F(2, 51) = 149.54$, $p < .001$, and a significant grade-by-genre interaction, $F(4, 51) = 3.61$, $p < .05$. Post hoc analyses on the main effect for genre showed that children at all grade levels read statistically significantly more stories than they read either science reports or poems. Additionally, kindergarten children read statistically significantly more science books than poems.

Texts representing focal genres included in language arts activities. The numbers of stories, science reports/books, and poems used during language arts instruction in the three classrooms are shown in Figure 10. As this figure illustrates, many more stories were read by children than texts representing any other genres. This pattern of findings parallels the pattern of findings yielded in relation to children's home literacy diets.

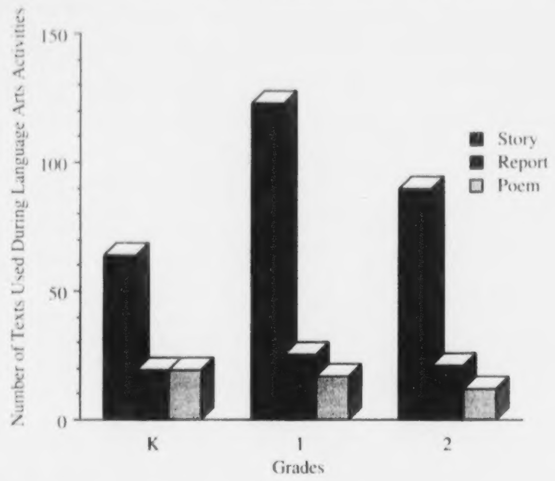

Figure 10: Texts Used in Language Arts

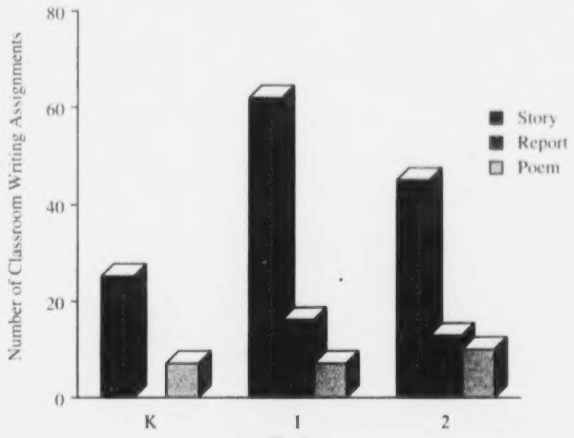

Figure 11: Assigned Classroom Writing

Children's assigned classroom writing. The numbers of classroom writing assignments involving the three focal genres are shown in Figure 11. As this figure illustrates, children at all grade levels were asked to write narratives more often than they were asked to write any other genres. This difference was more pronounced for first-grade children than it was for kindergarten and second-grade children. This pattern of findings parallels the pattern found for the use of tokens of different discourse genres as part of shared reading experiences during language arts instruction.

It is important to note that narratives were not as overwhelmingly present in children's unofficial writing. Although I did not systematically analyze children's self-selected writing journals because they were not used routinely by all children and because I could not decipher all that was contained within them, these journals contained much higher percentages of drawings, lists, personal letters, all about texts, descriptions, and poems than the percentages yielded from analyses of their assigned classroom writing.

Teachers' use of explicit metadiscourse in relation to different genres. By metadiscourse, I mean the language used to talk about language and text. Some examples of metadiscourse include *character, setting, description of attributes, characteristic activities, rhyme,* and *metaphor.* The number of instances of explicit metadiscourse about different discourse genres that the children's teachers engaged in during shared reading experiences and other instructional conversations is represented in Figure 12. Children heard much more explicit metadiscourse about narrative genres than about any other genres. This difference was more pronounced for first-grade children than it was for kindergarten and second-grade children. These findings parallel those yielded in the analyses of different text types used during language arts instruction and the analyses of the kinds of texts that children were asked to produce within classroom writing activities.

Children's self-reports about the sources of their genre knowledge. In the context of a comprehensive, open-ended interview, children were asked questions about where they learned about the three focal genres of this study. The results were telling. The most common responses to the question "Where do you usually learn about stories and storybooks?" were parent/sibling (58% of children in the entire sample) and teacher/school (67% of children in the entire sample). The results were quite similar for the question, "Where do you usually learn about poems and poetry books?" Fifty-four percent of children mentioned parent/sibling and 39% mentioned teacher/school. However, the results were quite different for the question, "Where do you usually learn about science and science books?" The most common response was The Discovery Channel (37% of children in the entire sample). Only 12% of the children mentioned parent/sibling as a source of this knowledge, and only 18% mentioned teacher/school.

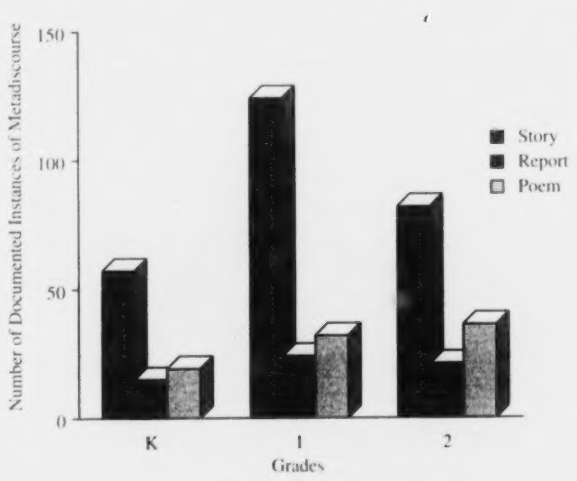

Figure 12: Metadiscourse

Summary and Conclusions

The findings from this study suggest that early elementary school children seem to have a fairly good grip on the cultural conventions of narrative genres, but a more nascent sense of the cultural conventions of informational and poetic genres. Many findings support this claim. There were a large number of main effects for genre, as well as a considerable number of grade-by-genre interactions. Based on structural analyses, children's stories were much more well-formed (88% of all obligatory elements for the entire sample) than their science reports (59% of all obligatory elements for the entire sample) or their poems (51% of all obligatory elements for the entire sample). Younger children tended to overgeneralize narrative features but not features of other genres. Children produced considerable numbers and kinds of blurred genres, such as those illustrated in the qualitative analyses. Children also provided complex and contradictory responses when asked to explain why their texts represented certain genres. In sum, although the early years of schooling mark a time when children are actively constructing their knowledge of many different genres, these years seem particularly important for the development of scientific and poetic genres.

I was somewhat surprised to find only three significant main effects for grade. Several partial explanations for this finding come to mind. First, based on comparisons with patterns of feature distribution described by other researchers (e.g., Biber, 1988; Langer, 1986; Pappas, 1991), many of the features that did not yield statistically significant grade effects were textural features. Some of these features may have been ones that children master very early in development (e.g., verb tense, temporal connectives, co-referentiality, specialized narrative discourse, biological lexis, rhyme). Other features may be so subtle and complex that they are not acquired until children are older than the ones in this study (e.g., syntactic embedding, logical connectives, co-classification, various poetic tropes such as metaphor).

A second possible reason for the small number of grade-level differences might relate to my analysis techniques. Although conducting repeated measures analyses of variance with two independent variables of three levels each was the proper choice for the kind of data in this study, these analyses are less sensitive to variance than some other kinds of analyses. Had I chosen to conduct separate one-way analyses of variance for each genre, I may have found more grade effects. Similarly, had I conducted within-genre pairwise comparisons for grade effects, I may have found even more differences.

Finally, it is worth noting that kindergarten through second-grade children spend a tremendous amount of time and energy on formal dimensions of writing and text production (e.g., letter formation, spelling, capitalization, punctuation, syntax, etc.). This intense focus could "use up" most of their cognitive resources, leaving little left to devote to functional dimensions of written discourse (e.g., style, genre, rhetorical purpose). Based on the findings from this study, however, it is clear that children are by no means genre somnambulists during the first few years of school. Like their developing knowledge of symbolic aspects of written language, their developing knowledge of genres is complex and multiplex.

The findings from this study support, extend, complement, and sometimes contradict previous findings on children's genre development. For example, this study suggests that children's knowledge of narrative genres may be more well developed than Hicks (1990) suggested. Related to this point, the first-grade and second-grade children in this study performed in ways that were quite similar to those of Langer's (1986) third-grade children on both the narrative and information report production tasks in both task conditions. This supports the findings of Newkirk (1989), Pappas (1993), Sowers (1985), and Zecker (1996), which have suggested that 6-year-old and 7-year-old children have considerable (but not necessarily comparable) working knowledge of narrative, informational, and poetic genres.

The children in this study also displayed more knowledge of narrative, informational, and poetic discourse than the kindergarten through second-grade children in Kroll's (1990) naturalistic study. One possible explanation for this difference lies in the different data collection techniques used in the two studies. Kroll simply collected whatever texts children wrote either spontaneously or as part of their language arts activities. I specifically asked children to write texts designed to instantiate two different and specific discourse genres. Among other things, the differences between Kroll's findings and my own suggest the complementarity of more naturalistic and more experimental studies in trying to understand children's developing communicative competencies.

My findings also differed somewhat from those of Pappas (1991, 1993). The kindergartners' performances in this study seemed "lower" than the performances of Pappas' children. This difference may be attributed largely to our different task constraints. Asking children to generate original texts and to write them down—as I did—is considerably more complex and difficult than asking children to recount texts with which they are familiar—as Pappas did. Such differences reinforce Scribner and Cole's (1981) insistence that tasks and task contexts influence how and to what extent children display their knowledge, as well as the fact that different tasks scaffold development and learning in different ways and to different degrees. From this perspective, Pappas' work and my own are complementary. Together, they suggest that, although kindergartners may have considerable tacit knowledge about different genres that they use to complete oral or written reenactment tasks, it may take them some years for such knowledge to become explicit and to be integrated with the cognitive, linguistic, and discursive requirements of composing original extended written discourse. More research is necessary to understand this complex developmental process and the roles that various social and cultural experiences and practices play within it.

The performances of the children in this study on the poetry production task extend Dowker's (1989) work on children's ability to produce poetic discourse in two ways. First, they demonstrate that children as young as five years old are adept at writing poetry and not just speaking poetically. Dowker's tasks required the production of poems in the oral mode alone. Second, my findings showed that kindergarten, first-, and second-grade children have little trouble responding to bald requests to produce poetic texts. Because Dowker scaffolded children's performances by providing them with poetic texts and asking them to produce similar texts, she was not able to document what they might have done on their own.

The poetic performances of the children in this study partially contradicted the findings of Ford (1987). Most notably, the children in my study demonstrated much more knowledge of poetic devices as defining characteristics of poems than the children in Ford's study. Additionally, whereas Ford's study suggested that third grade is a watershed for poetic competence, my study suggested that children's knowledge develops slowly and steadily across the grades. I suspect that these differences are partially related to the very different tasks used in the two studies. Ford asked children to talk about their knowledge using traditional interview questions (Mishler, 1986). I asked children to use their knowledge to produce poems of their own. Quite plausibly, my tasks allowed children to draw upon their "tacit" or "working" knowledge of poetry in ways that Ford's tasks did not. Additionally, writing "their own" poems may have been more motivating than simply talking about what poems are.

The overall set of findings from children's poetry writing merits some discussion. Although children produced many instances of tropes that involved the dense co-patterning of sound and syntax (e.g., alliteration, assonance, rhyme), they produced almost no tropes that involved the dense co-patterning of meaning (e.g., metaphors, similes). There are several plausible partial explanations for this finding. Most research on children's developing understanding of metaphor and simile has been conducted with children much older than the ones in this study. As Winner (1988) has explained, what research that has been conducted with five-year-old through seven-year-old children has produced contradictory findings. This suggests that this age period may be a time when the understanding of semantic tropes is only beginning to emerge. Additionally, most studies of young children's developing understanding of semantic tropes have focused on metaphor and simile comprehension and not metaphor and simile production. Abundant evidence exists within the child language literature documenting a comprehension-before-production pattern in the acquisition of many linguistic and discursive concepts and skills.

Drawing together previous findings with the findings from this study, it seems that the acquisition of phonetic and syntactic tropes is easier for children and may occur earlier in development than the acquisition of semantic tropes. This idea has been implicit in many anecdotal reports of children's language play and literary dexterity (e.g., Bauman, 1982; Brady & Eckhardt, 1975; Chukovsky, 1968; Heath, 1989; Rogers, 1979), but it has never constituted a primary trajectory of research. This is indeed an area of inquiry ripe for systematic investigation.

Reinforcing the findings of Chapman (1994, 1995), this study suggests that children's developing understanding and use of different genres are emergent phenomena. By this I mean that development is complex and varies as a function of generic constraints, task conditions, and other contextual variables. This characterization is supported by several pieces of evidence in my data. First, certain kinds of linguistic features tended to produce more effects and/or different kinds of effects than other features. For example, children demonstrated more knowledge of macro-level features such as text structure than knowledge of more micro-level features such as co-classification devices. Moreover, this finding was more common among younger children than older children. Second, although most children displayed much more knowledge of fictional narratives, some children displayed more knowledge of scientific (biological) texts (e.g., Anne's report) or poems (e.g., Keisha's poem). Third, although older children tended on average to produce more well-formed instantiations of all three genres, some younger children produced the most well-formed tokens of these genres. Fourth, although many of the children's texts were fairly conventional (even formulaic), some children produced texts that either did not represent the genres they were designed to represent (e.g., Laura's story) or were distant cousins of the target genres (e.g., Denise's report). It was common for some children (especially younger ones) to produce stories when asked to write science reports (e.g., Jon's report) or poems (e.g., Beth's poem). Interestingly, however, many of these story-like reports included a moral or an epilogue, and stories with morals and epilogues are among the most informational kinds of narratives. Similarly, many story-like poems embodied some poetic features such as imagery, rhythm, or repetition. A fifth piece of evidence for characterizing children's genre development as emergent was the fact that many children produced hybrid science reports that incorporated elements from popular informational genres—phone books, encyclopedias, infomercials, and advertisements (e.g., Denise's report). Sixth, some children produced texts that were both culturally conventional and highly inventive, apparently reflecting children's idiosyncratic interests, experiences, and predilections. Finally, children's metadiscursive talk showed that they were working hard to organize their knowledge of the complex relations among rhetorical purposes, text features, and genres. Anne, for instance, wrote an exceptionally well-formed science report, which she justified by noting that it contained factual information. And she reported this factual information using technical vocabulary or a scientific lexicon with extreme precision. Similarly, although Jon wrote a report about lions that was very story-like, his justification of the text as a report demonstrated that he was struggling to organize his knowledge of different genres. For example, he used the term lion alternately to refer to "lion" as a particular character in his text and as a phylogenetic class of animals.

Taken together, these various findings suggest that children's category systems for genres are more nascent and less discriminatory than those of most adults. Yet, they also suggest that children develop increasingly complex and flexible knowledge repertoires of generic forms, functions, and the relations between the two. Theoretically, these repertoires seem to be organized less like classical Aristotelian category systems and more like prototype systems (e.g., Pappas et al., 1995; Rosch, 1975, 1978; Swales, 1990) or cognitively flexible systems (e.g., Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987), with category membership based on family resemblances rather than mutually exclusive and exhaustive feature sets. As children construct their genre theories, they appear to integrate many different kinds of genre knowledge: textural, structural, and functional. Children also seem to exhibit considerable uniqueness in the particular ways that they organize and reorganize many different kinds of and degrees of knowledge. All this suggests that learning about different genres is an extraordinarily complex affair that probably unfolds over many years, may proceed in many different ways, and may be linked in non-trivial ways to children's interests and experiences.

Summarizing the results from analyses of children's literacy diets and experiences with different genres is fairly simple and straightforward. According to all the indexes used, children's experience with narrative discourse and metadiscourse exceeded their experience with expository and poetic discourse and metadiscourse to a considerable degree.

At home, there was a gradual increase across the grades in the numbers of narrative texts that children read. The numbers of informational and poetic texts that children read at home remained fairly constant. At school, children in all three classrooms also read, wrote, and talked about narrative genres much more than non-narrative genres. Interestingly, television was reported to be the most common source of knowledge about informational genres.

Drawing conclusions about the specific relations between children's literacy diets and experiences and their performances on text production tasks is much less simple and straightforward. Nevertheless, it seems fair to claim that children's overexposure to narratives and their underexposure to poems and informational texts contributed in no small way to their differential performances on text production tasks. I will return to this issue when I discuss the pedagogical implications of this study.

Directions for Future Research

This study suggests several directions for future research. First, longitudinal research using both experimental and multiple case-study designs is needed to understand more fully the "emergent" qualities of children's developing knowledge about genres. Second, since producing texts representing different genres involves responding to different contexts and their communicative demands, we also need more research that integrates textual and contextual analyses. It is not enough to measure development and learning alone, even when design techniques are employed to insure validity and reliability. Nor is it enough simply to describe different socialization and acculturation experiences and to accept that such differences adequately account for differences in measures of cognitive development and communicative competence. Learning different discourse genres (and I suspect many other dimensions of literacy) seems to involve a complex interplay of opportunities provided through social and cultural experiences and somewhat idiomatic patterns of uptake that are grounded in individual life histories.

A third area ripe for investigation concerns the possibilities for genre pedagogy. Because we know very little about the relative effects of explicit versus implicit instruction in the teaching of genre (e.g., Fahnestock, 1993; Freedman, 1993; Williams & Colomb, 1993), much research also remains to be conducted on how different kinds of instruction, tasks, and practices influence genre learning. In relation to this point, we also need research that helps us know what might be the most productive grades during which to provide certain experiences and kinds of instruction.

Finally, most research on children's genre development has focused only on stories and informational texts. To develop a comprehensive theory of genre development will require expanding this focus to include many other genres and sub-genres (e.g., poems, biographies, letters, memos, and even e-mail).

Implications for Pedagogy

A key implication for pedagogy suggested by the findings from this study has to do with children's literacy diets. These findings suggest that it is important for young children to experience many high-quality examples of narrative, poetic, and expository texts during the early years of elementary school. According to a kind of negative dialectic, the fact that the children in this study read more than five times as many storybooks as either information books or poems supports this claim. When you multiply this exposure pattern by the number of years children spend in elementary school, the claim seems yet more valid.

Children need and deserve more balanced literacy diets. The types of writing required for achievement in school and beyond assume an awareness of many specific textual forms and functions, as well as an awareness of the contexts in which certain kinds of texts tend to circulate. Knowledge of genres is central to becoming a competent writer across multiple communicative contexts because genres "correspond to typical situations of speech communication, typical themes, and, consequently, also to particular contacts between the meanings of words and the actual concrete reality under certain typical circumstances" (Bakhtin, 1986, p. 87). From this perspective, the ability to write an outstanding natural history report on the rain forests of Brazil does not insure that the same writer could write an even adequate closing statement in a court of law or a sonnet for an English class. Such a situation is probably not attributable to the increased difficulty of the latter task in comparison with the former. It is more likely that this writer has had more exposure to and more experience with writing and talking about natural history genres than legal genres or the genres of poetry. Concomitantly, children who encounter different kinds of written genres are likely to have a much greater general awareness of these genres, their shapes, their meaning potentials, and their functions than children who do not. In this regard, Halliday (1978) pointed out that most of the problems of educational failure are not linguistic problems but problems associated with making transitions from familiar to unfamiliar discourse genres, practices, and communities in school settings. An important task, therefore, for researchers and practitioners alike is to investigate the properties and demands of different discourse genres, practices, and communities, and the ways in which individuals can master the conventions of discourse requisite for full participation in various school sub-communities (e.g., the mainstream context of the classroom, the science lab, the mathematics class, the poetry reading group). If children do not read, write, and talk about different discourse genres, they are unlikely to fare well in the discourse contexts in which such genres are common currency. As Fowler (1982) has emphasized:

> Far from inhibiting the author, genres are a positive support. They offer room, one might say, for him to write in—a habitation of mediated definiteness; a proportional neutral space; a literary matrix by which to order his experience during composition … . Instead of a daunting void, they extend a provocatively definite invitation. The writer is invited to match experience and form in a specific yet undetermined way. Accepting the invitation does not solve his [sic] problems of expression … . But it gives him [sic] access to formal ideas as to how a variety of constituents might suitably be combined. (p. 31)

According to Graves (1983), beginning writers experience particular difficulty locating where information belongs in their written texts. Knowledge of genres helps children represent their knowledge and experience in textual form. For example, when children attempt to construct a personal narrative, they are able to develop a much stronger sense of chronology, as well as of missing textual information if they are guided by structural and textural knowledge of the narrative genre. In domains such as social studies and science, where the order is determined largely by logical relations among information, children are aided significantly in organizing this information if they know something about the structures and textures of the genres of informational texts. Eventually, such knowledge can be extended, analyzed, and incorporated into the child's evolving understanding of what it means to compose or to criticize different types of texts, just as children gradually analyze and reconstruct most features of their natural language into an increasingly more powerful communicative system (Lindfors, 1987; Pappas & Brown, 1987; Villaume, 1988).

Several researchers (e.g., Christie, 1989, 1995; Cox, 1986; Newkirk, 1989; Pappas, 1991, 1993) have recently documented myriad ways in which children have been overexposed to narrative genres and underexposed to all other genres. The findings from this study certainly fit with this characterization. Together, these various studies suggest that we may be guilty of curricular genrecide with respect to language arts pedagogy in the public schools. Any system of education that limits children to one genre, even one as powerful as the fictional story, may also limit the cognitive, social, and political vantage points that children may assume. The extent to which knowledge of the conventions and distinctions of different genres can be enabling to students *vis-à-vis* academic tasks, social interactions, and political action must be a central concern within American education today. If we presume a productive dialectic between genres, mind, and world, then the more different kinds of genres that children learn as part of their language socialization and education, the deeper and broader their potential for cognitive and communicative growth will be.

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Biography

George Kamberelis is an Associate Professor of Education at Purdue University where he teaches courses on literacy, classroom discourse, and interpretive research methods. His research draws upon social theories, theories of practice, and theories of discourse to investigate situated language and literacy learning in school and community contexts. He is currently working with teachers in urban schools to investigate discourse socialization across different subject areas.

At-Risk Children's Metacognitive Growth During Reading Recovery Experience: A Vygotskian Interpretation

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Abstract

Metacognition (i.e., self-appraisal and self-management) implies the process of active control over one's own cognition (Brown, 1980; Jacobs & Paris, 1987). This study described 17 at-risk first graders' metacognitive growth in an early literacy intervention program—Reading Recovery. Each child was encouraged to relate an oral tale based in experience and then asked to dictate that oral monologue as a written-for-others text. Per Vygotsky's (1962) developmental theory which relates speaking and thinking through the regulatory function of language and the internalization of others' discourses, metacognition was observed in the children's spontaneous speech as they engaged in a challenging literacy task such as adapting an oral tale to a literate register text. Data were collected at the entry and exit of the Reading Recovery experience. Linguistic, statistical, and qualitative analyses were performed using Cox's (1994) guidelines. Results revealed that the children exhibited statistically significant and qualitatively distinct growth during the enrichment experience, not only in their knowledge about self, literacy task, and task related strategies, but also in their regulatory capacities to gain control over text content and to accommodate audience needs. Limitations and implications of the study are also discussed.

In recent years, the literacy problems of educationally disadvantaged populations have received added attention (e.g., Smith-Burke, 1989) due to the projected shift in the demographics of school-age children in the coming decades (Pallas, Natriello, & McDill, 1989). One of the more significant developments in addressing the literacy needs of at-risk children has been the introduction and implementation of Reading Recovery. Reading Recovery (RR) is an early literacy intervention program developed by New Zealand educator Marie Clay (Clay, 1993a) to assist at-risk first grade children in developing effective literacy skills typical of successful learners. Research at the local, state, national, and international levels has demonstrated that RR is a viable alternative to traditional remedi-

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al (e.g., Chapter 1) instruction (e.g., Clay, 1990; Hiebert, 1994; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Schmitt, 1995). For example, Pinnell et al. (1994) compared Reading Recovery with three other instructional models and found that the former was more effective than the latter. Specifically, the study reported the RR children's performance on four measures (sentence dictation, basal-adapted text reading, Gates-MacGinitie, and Woodcock) was statistically significantly better than any other treatment groups (Reading Success, Direct Instruction Skills Plan, Reading/Writing Group) and the control group. Shanahan and Barr (1995) concluded from their meta-analysis that the effects of Reading Recovery are "comparable to those accomplished by the most effective educational interventions" (p. 959).

While RR's contribution to children's developing reading and writing skills is well documented, few studies (e.g., Schmitt, Younts, & Hopkins, 1994) have focused on what and how the RR experience contributes to children's metacognitive development. Because metacognition and literacy skills are closely related (Cox, 1994; Donaldson, 1978; Olson, 1994; Scribner & Cole, 1981; Wood, 1988), it is especially important to examine at-risk children's metacognitive growth during the RR experience.

Theoretical Framework

Metacognitive Theory

Metacognition, in its most general sense, implies the process of active control over one's own cognition (Brown, 1980). According to Flavell (1976), metacognition refers to "one's knowledge concerning one's own cognitive processes and products … " and to "the active monitoring and consequent regulation and orchestration of the processes in relation to the cognitive objectives on which they bear … " (p. 232). In other words, metacognition encompasses two aspects: self-appraisal (i.e., awareness) and self-management (Jacobs & Paris, 1987; Paris, Wasik, & Westhuizen, 1988). The first refers to children's declarative knowledge (knowing what), procedural knowledge (knowing how), and conditional knowledge (knowing when and why). The second aspect, often equated with executive control (Brown, 1983; Cox, 1994; Garner, 1994), refers to children's strategic planning, online monitoring, and regulating action. The existence of regulatory action presupposes knowledge of cognition. That is, if there is evidence of cognitive regulation, some level of knowledge about self, task, or strategy must exist, albeit without conscious awareness. In the literacy context (i.e., reading and writing), knowing *what* (declarative knowledge) is realized in aspects such as strategy and metalinguistic awareness. Knowing *how* (procedural knowledge) is realized through regulation of both process and product (e.g., monitoring the choice of more precise words for an audience or applying a word recognition strategy). Without awareness, students may lack a readiness to exercise control over or regulate their learning (Gordon, 1990).

Relative to literacy, metacognition is operationally defined as independent, strategic learning and involves the knowledge of self (e.g., one's strengths/weaknesses, interests, study habits), task (information about the difficulty of various tasks and the different demands of tasks), learning strategy variables (Flavell, Green, Flavell, 1995; Schmitt, Younts, & Hopkins, 1994), and the regulatory functions of planning, monitoring, checking, evaluating, and revising (Baker & Brown, 1984) one's reading comprehension or construction of comprehensible text for a reader.

Metacognition is important in education for at least four reasons. First, effective learning depends on successful orchestration of cognitive operations (Dembo, 1994). Second, numerous studies have reported that metacognition is closely related to being a more proficient reader (e.g., see Haller, Child, & Walberg, 1988; Paris, Wasik, & Westhuizen, 1988 for reviews) and better writer (e.g., Cox, 1994; Flower & Hayes, 1981). Third, metalinguistic comments by young children have been documented in terms of early literacy behaviors (Clay, 1972; Teale & Sulzby, 1986). Fourth, recent research indicates that as young children develop literacy skills, they are already exhibiting signs of emergent procedural metacognitive awareness and control over literacy processes and products (Cox, 1994; Cox & Sulzby, 1982; Dahl, 1993; Gordon, 1990). The present study tracks evidence of RR children's developing emergent metacognitive control over their literacy processes and products during their time in one Reading Recovery program.

Vygotskian Theory

In this study, Russian psychologist Lev S. Vygotsky's (1962) developmental theory, relating speaking and thinking through the regulatory function of language and the internalization of others' discourses, drives our interpretation of metacognition. Vygotsky contends self-regulatory speech is a universal phenomenon through which thought and language unite to exert control over behavior. Specifically, young children talk to themselves and to others as they engage in literate activities. Such "spontaneous utterances" (Dahl, 1993) or "private speech" (Berk & Spuhl, 1995) express(es) inner cognitive processes and serve as a "directing force" for action. For example, children routinely use oral language as a vehicle for discovering and negotiating emergent written language understandings and for getting meaning on paper (Cox, 1994; Dyson, 1983, 1991). Further, the development of higher mental processes such as metacognition originates in social experience and is transferred from the interpersonal to the intrapersonal psychological planes by means of self talk (Vygotsky, 1978). With the aid of such private speech, children's self-regulatory capacity expands over time. Berk and Spuhl (1995) explained,

> As children experiment with speech-to-self in order to cope with new tasks, some types of speech may effectively transform behavior, others may be of relatively little consequence, whereas still others may be debilitating. As the coordination of utterances with action becomes increasingly refined, private speech achieves mastery over behavior and is internalized. (p. 147)

Based on Vygotsky's theory, metacognition is observed in children's spontaneous speech as they engage in a challenging literacy activity such as constructing what we call 'a literate register text' (i.e., one for others to read). Particular utterances during and surrounding the literate activity can be distinguished from the story and other discourse because of their intonation and their self- and other- regulatory functions to monitor the story's content/form and specifically address planning, monitoring, evaluating, and revising. Further, a subset of these utterances directly suggests internalization of thinking processes through their adoption of another's speech (Bakhtin, 1986; Wertsch, 1980, 1991).

This study differs substantively from earlier psychological research which often measured metacognition through think-alouds, stimulated recalls, or retrospective interviews reporting conscious metacognitive strategies during or after a task (e.g., Flower & Hayes, 1981), an operationalization that is beyond a child's grasp from Vygotsky's perspective (Berk, 1992) and which is suggested as less accurate in capturing thought processes (Nisbett & Wilson, 1977).

Young Children and Metacognition

The issue of whether young children develop metacognition has been a subject of considerable controversy. Psychological literature generally claimed that young children do not have the ability to think about their own thought processes and that they are limited in their ability to do anything about metacognitive knowledge (Baker & Brown, 1984; Dembo, 1994; Flavell, 1985; Garner & Reis, 1981). For example, Flavell (1985) argued that it is not until late childhood or early adolescence that students become capable of assessing a learning problem, devising a strategy to solve the problem, and evaluating their success.

Recent studies of young children using the socio-constructivist framework have, however, offered preliminary evidence to the contrary. Defining metacognition as cognitive self-appraisal and self-management, a growing body of research has documented what young emergent readers and writers know (e.g., Dahl, 1993; Goodman & Altwerger, 1981) and what they do when they engage in literate activities (e.g., Clay & Cazden, 1992; Cox, 1994; Cox & Fang, 1996; Rowe, 1989). For example, Dahl (1993) examined the spontaneous utterances of first-grade inner-city children in two urban sites. She found that these learners did say aloud some of the things they were thinking and that nearly half of the 87 categorized utterances were metacognitive statements indicative of children's engagement in self-monitoring and awareness of written language.

Cox's (1994) recent work blended Vygotsky's developmental theory about the relationship between language and thought with Halliday's systemic and sociolinguistic theory of language development. She found that children as young as preschoolers already used regulatory utterances that implied procedural regulatory thinking relative to producing a comprehensible literate register text. She further reported that many of these preschoolers made explicit self- or other-regulatory utterances that exerted control over (by planning, monitoring, checking, evaluating, and revising) their dictated texts' content, form, and structure for their audience. Along the same vein, Rowe (1989) also reported that as young children developed reading/writing skills, they were already exhibiting signs of emergent metacognitive awareness and control related to writing in their own systems.

One recent study has specifically addressed young at-risk readers' potential for developing diverse forms of metacognition. Schmitt, Younts and Hopkins (1994) examined one Reading Recovery (RR) child's development of metacognitive knowledge related to reading and strategic regulation of the reading process over a span of 25 lessons. They reported noticeable evidence of metacognitive growth during the RR experience. Specifically, they indicated that at the end of lesson 25, the child revealed some new insights about herself as an employer of a variety of sensemaking strategies during reading, demonstrated more knowledge of task and greater use of task-relevant strategies, and had begun to achieve independent, strategic control over the reading process.

While research continues to favor RR as an instructional model for at-risk children's reading and writing development (e.g., Pinnell, et al., 1994), there is still little understanding with respect to RR's contribution to at-risk children's metacognitive growth beyond problem solving reading strategies. Because metacognition and literacy skills are inextricably related (Donaldson, 1978; Scribner & Cole, 1981; Wood, 1988), it is important to investigate what and how RR contributes to children's metacognitive growth. Such investigation can give us a more complete picture of RR's role in children's literacy ontogenesis. Toward this end, systematic analysis and research are needed to help determine and articulate (a) what it is that children have learned and how have they improved; and (b) which of these learnings, though not explicitly taught in the RR program, are implicitly available in the instructional context. As Wood (1988) noted, "By making explicit what is implicit in their [children's] performance, we gain an objective understanding of the tasks, demands and problems that children have to face when we try to teach them to read and write fluently" (p. 168). Further specifications of RR's contributions promise to yield crucial instructional and research insights that may (a) enhance our understanding of children's literacy and cognitive development, and (b) allow us to better assist other at-risk learners, who do not yet have RR available to them, to become more proficient readers and writers.

The Study

Research Questions

The present study focuses on children's developing emergent literacy related metacognition during the RR experience. It addresses the general question of whether the development of metacognition comprises a part of what the RR experience contributes to literacy development. Specifically, three research questions were raised: (a) Do at-risk children make regulatory utterances to self or other that explicitly regulate the text's content, structure, or an issue of comprehensibility for a reader? (b) Are there quantitative or qualitative differences in these children's metacognitive utterances between the entry and the exit sessions of the RR program? and, if so, (c) Are any metacognitive gains statistically significantly associated with gender, race, and income variables that have been consistently identified as sensitive to the vicissitudes of instruction (Dahl & Freppon, 1995; Delpit, 1986, 1988).

Participants

Twenty-seven first grade children from four suburban schools within one district of a midwestern city participated in the study. They were selected for Reading Recovery according to their levels of performance on Clay's *An Observation Survey of Early Literacy Achievement* (1993b). Clay's observation survey provides individual information about children's letter knowledge, writing and reading vocabularies, ability to hear and record sounds in words, understandings about concepts of print, and skill in reading continuous text. The selection of the children and their RR instruction were monitored by RR teacher leaders and all 27 children were instructed by certified Reading Recovery teachers.

Ten children were eventually withdrawn from the study because they either moved away with their families before completing the RR program or were referred for psychological testing and placement in special education. In terms of demographic composition, of the remaining seventeen children, there were six girls and eleven boys, seven African Americans and ten European Americans, and five from low income families, and twelve from middle income families. The level of children's family income was indicated by their schools' federal free lunch program.

Administrative Procedures

Each child was interviewed by a familiar adult who had talked informally with groups of children and had established rapport with the target children prior to the data collection sessions. Data were collected at four sessions spanning an average period of approximately six months with a minimum of four months for some children and a maximum of nine months for others: (a) once before the first RR instructional lesson, (b) twice at equal intervals during the program (as each child reached level 5 and level 10), and (c) once shortly after the child's dismissal from (i.e., successful completion of) or at the end of the program. All interviews were audio-taped and transcribed for later analyses. For the purpose of this paper, only data from the entry (session 1) and exit (session 4) were used. At both of these sessions, the child was encouraged to relate a vis-á-vis oral tale about a personal experience. Then the adult commented on the oral monologue tale's interest and suggested he or she knew some other similar-age children who would like to read that story. The adult then invited the child to dictate that oral tale as a story for these other children to read (i.e., a book-like or literate register text). The adult acted only as scribe using a laptop computer, offering no help beyond simply recording the child's words, re-reading the text aloud, and inviting edits. This task has been used successfully in previous studies involving preschool and first grade children (e.g., Cox, 1994; Cox & Dixey, 1994; Cox, Fang, & Otto, 1997; Cox & Sulzby, 1984).

The study's task has several distinct characteristics. First, the dictated text represents what the child is sufficiently familiar with regarding literate register language to use intuitively or independently. Second, the task implicitly requests the child to code-switch from an oral monologue to a literate register one, a challenging undertaking for young children from Vygotsky's perspective. Third, the task maximizes the child's opportunity to use his or her literate register knowledge to control self-sponsored text, because it uses a child-selected memorable experience developed first in oral language. Finally, the use of dictation frees the child of demanding mechanical concerns (e.g., spelling, forming letters, punctuation). Thus, the task can be performed without prompting and intervention of researcher probes. This enhances the reliability and validity of the research data and maximizes the methodological rigor of early childhood research.

In essence, the task provides a situation in which task difficulty was increased (i.e., from an oral tale to a written-for-others text). The increase in task difficulty may, per Vygotsky's theory, force a young child's developing internalized self-regulation outward as audible self or other-regulatory speech. In addition, the only way to control the text was through the scribe. The task requested the child to, intuitively or consciously, take responsibility for constructing a literate register text while also allowing him or her to review, monitor, and edit his or her text by making requests of the scribe.

Scoring Procedures

Linguistic, statistical, and qualitative analyses of the data were conducted. Specifically, linguistic analyses, guided by Cox (1994), were completed independently by two trained scorers. First, all utterances in the dictated stories and surrounding discourse that suggested strategically regulatory metacognitive functions were identified. To ensure accuracy in our judgement, audio tapes were replayed so that the child's dictation intonation became part of the linguistic context in which analyses were done. To be considered an instance, an utterance had to be an implicit or explicit attempt by the child to strategically plan, monitor the composing process, and regulate the comprehensibility of the text for the implied reader. These instances were then classified by two trained scorers into three categories: (I) externalized speech implying inner thinking and general planning; (II) audible self- or other-regulatory speech addressing audience needs; (IIa) audible and explicitly other-regulatory speech specifically directing the scribe to address audience needs; and (III) audible metalinguistic comments. Features and examples of these categories are furnished in Table 1. Interscorer agreement was approximately 81% with 100% resolution achieved through discussion.

All categories of regulatory speech or metalinguistic comments were parsed as T-units, per Cox (1994). A proportion score of metacognitive utterances relative to the dictated story T-units was then calculated. For example, if a child dictated a fifteen T-unit text with five T-units of metacognitive utterances embedded during the composing process, the total metacognitive score would be 0.25, that is, 5/(15+5). These proportion scores were then submitted to multiple analysis of variance (MANOVA) for repeated measures. The between-subjects factors are gender, race, and family income. The within subject factor is time. Because repeated measures analysis of variance is for determining the statistical significance of change, the F-ratios for the between-subjects factors (also called main effects) are usually not of interest (Gall, Borg, & Gall, 1996). Of interest instead is the interaction between time of measurement and between-subjects factors. In other words, what the study is primarily interested in is whether the difference between the entry and exit means of one group is significantly different from that for the other group. Thus, the between-subjects effects were generally not reported unless they reached statistical significance. Significance level was set at 0.05 for all analyses. For all the statistical analyses, the SPSSX advanced software package version 4.0 was used. Finally, cross-case comparisons and contrasts (Miles & Huberman, 1984) were employed to determine if qualitative differences existed in children's metacognitive utterances between the entry and exit sessions of the RR experience.

Results

Quantitative

The means and standard deviations of metacognition scores for both the entry and exit sessions of Reading Recovery are provided in Table 2. For the entry session, fifteen of the seventeen children in this study (88%) used some type of metacognitive speech that indicated a regulatory function. At the exit session, all seventeen participants produced metacognitive speech directed at

Table 1: Characteristics and Examples of Metacognitive Speech Categories

Category	Features	Examples
I	externalized speech implying inner thinking and general planning	* …um … oh, I can't think. * I, uh, I throw his toys. * And … let's see.
II	audible self- or other-regulatory speech addressing audience needs (this category monitors, checks, evaluates, or revises the content and text to meet the audience comprehension needs	* And then I go (corrects himself) get in order * My dog sleeps like him, like my cat. * And my sister said that we gone … . are going to chew gum. * We dropped, we dropped her off.
IIa	audible and explicitly other-regulatory speech specifically directing the scribe to address audience needs (this category monitors, checks, evaluates, or revises the content and text through other regulation to meet the audience's comprehension needs)	* I want to take that off (pointing to the word "grandpa" on the scribe's computer screen) * I want me and my sister (in the title).
III	audible metalinguistic comments (this category signals the writer's monitoring and understanding of some aspects of writing, text, and the writing process)	* That's the end. * (commenting on his own story) If he (trapped dog) didn't get his head out free, it (story) would not be as good. * The first one (letter) is big and the second one's little.

* Adapted from Cox (1994)

controlling their literacy products and processes.

Repeated measures MANOVA revealed that there is a statistically significant time effect, F (1, 11)=17.16, p=.002. This means that children showed statistically significant growth in metacognition during their RR experience. There is also a statistically significant family income by time effect, F (1, 11) = 7.95, p=.017. This suggests that children from low and middle income families demonstrated significantly different patterns of metacognitive growth during the RR experience. No other main effects or interaction effects were judged to be statistically significant.

Qualitative

Microanalyses suggest distinct differences in the quality of children's metacognitive utterances between the entry and exit sessions of the RR program. In general, at the entry session most metacognitive utterances tended to indicate some form of general planning (achieved primarily through the use of subvocal utterances such as "um," "uh," or "err") or were metalinguistic comments in nature (primarily served by a story end marker "that's all" or "the end"). Below is an example of an entry session dictated text with embedded metacognitive utterances italicized and categorized:

Ted (African American boy)

(Scribe prompts child to dictate)
Child: (dictates) We get to play everything.
Scribe: (repeats) We play everything.
Child: (continues dictation) outside and hot wheels. We get to play slide and monkey bars and the tires.
Scribe: Okay.
Child: (continues) And we play inside.
Scribe: Okay.
Child (continues) Wel-l [I], we hit it and we kick it and we hit it with our hands and we hit it with out feet and … and … [I] … That's all [III].
Scribe: (repeats) and that's all.

Table 2 Means and Standard Deviations (SD) of Metacognition Scores by Gender, Race, and Family Income at Entry and Exit of Reading Recovery Program

	Entry Session		Exit Session		Gains	
	Mean	SD	Mean	SD	Mean	SD
Overall	0.37	0.22	0.51	0.18	0.14	0.24
Gender						
Male	0.44	0.19	0.53	0.19	0.09	0.25
Female	0.23	0.22	0.47	0.19	0.24	0.20
Race						
African American	0.30	0.21	0.49	0.19	0.19	0.19
European American	0.41	0.23	0.52	0.19	0.11	0.27
Family Income						
Middle Income	0.42	0.21	0.47	0.16	0.05	0.20
Low Income	0.25	0.23	0.61	0.21	0.36	0.18

Child: (continues) and we play blocks and we play, we play … [I] everything inside. We play Duck Duck.
Scribe: Now just a minute. What did you say? "And we play blocks … "
Child: and we play outside in the tire.
Child: (continues) We go back inside and then we sit down and take a break and then they call our name to go pick a station.
Scribe: Okay.
Child: (continues) We have recess inside and outside. And then we go over, get our lunch and lunch money too. We get our lunch money to give it to the one who cooks. We get ready to go outside. And then we sit down in our chairs and practice our numbers.
Scribe: We sit down in our chairs and practice our numbers.
Child: That's all [III].

Although a few of these children did attempt to address text content through on-line monitoring and regulating the scribe (e.g., "Did you say 'knock people off the pit'?" "Go, go back up to the cat thing … "), their self- and other-regulatory capacities were quite limited in both scope and depth. Furthermore, there were only a few metacognitive utterances that suggest evidence of self-correction or elaboration during dictation to address issues of precision and ambiguity, an indication of possible lack of self-appraisal or knowledge of literate register expectations during the composing process. This is reflected in the dearth of category II metacognitive utterances. The two examples below help illuminate the point.

Jeffrey (European American boy)
(Scribe prompts child to dictate)
Child: (dictates) We traveled for two days. Ahh, and … and then [I] we went to Florida.
Scribe: Okay?
Child: (continues) Then we went in a place.
Scribe: Okay.
Child: (continues) Then we rented a place.
Scribe: (repeats) into places?
Child: No, we rented a house [IIa].
Scribe: Oh, I'm sorry, OK. (scribe types "house to replace place" and repeats "Then we rented a house.") Okay?
Child: (continues) Then we went to Disney World. Then we went to go ride rides. Then we went to go eat. Um … (big sigh) I'm trying to think … [I] and back to the place. And then we went back to dinner and then we went on more rides.
Scribe: (repeating child) and then we went back to dinner.
Child: (edits "dinner") to Disney World [IIa].
Scribe: (repeats) "to Disney World and then we ride more rides." Okay?
Child: (continues) Then we went to Myrtle Beach. And then we left. And that's all [III].

Kiran (European American girl)
(Scribe prompts child to dictate)
Child: (dictates) We were at my house. And then we went to my grandma's, (self-corrects) grandpa's [II]. And then me and my brothers

went up to get the truck.
Scribe: OK
Child: (continues) to load the truck up with our stuff. An … d (drawn out), and we moved up to Indiana [I]. Errrh … [I]. That's all [III].
(Scribe rereads and invites edits)
Child: Umm … [I]. That's enough.
Scribe: Do you want to change anything?
Child: (shakes head) no.
Scribe: That's just the way you want it.

In sharp contrast, the metacognitive utterances at the exit session as a whole showed marked growth in both self-appraisal and regulatory capacities. For example, although utterances indicating planning functions continued to be common at the exit session, they are both more strategic and purposeful, clearly serving content and audience needs (e.g., "I can tell you three stories," "How long are you going to write," "I will do one [story] about Christmas," "Can I say about my dog?"). In addition, the children appeared to be more cognizant of their planning process (e.g., "Take me a while [to think]," "Oh, let's see," "I can't think any more"). Furthermore, while at the exit session the RR children continued to use end markers (e.g., "the end," "that's it," "that's the last thing," "and that's probably about it," "That's the end of that sentence") to signal the end of the composing process, their repertoire of metalinguistic knowledge had grown considerably. For instance, they more closely monitored the writing process and clearly articulated their concerns relative to text content and format (e.g., "But you forgot to put the other 'C'," "What are you writing?" "Can you write all of it?" "It almost took up a whole page," "But that's supposed to be a K [child pointing to the computer screen]," "Like him, (spell) H-I-M," "The first one's [letter] big and the other one's [letter] little," " … to my grandma, period").

More remarkably, many children appeared to be acutely cognizant of what a story is or what a good story should be like (e.g., "That part's funny," "I think they [audience] will enjoy it [story]," "We can show that to my teacher," "I guess I made good stories," "It's [story] real long," "I don't know how a story is," "By Linda Nessell," "In the Snow [as story title]," "It's [story] called Lion and My Horse"). Below is an illustrative example.

Greg (a European American boy)
(Scribe prompts child to dictate)
Child: I can tell you three stories [I].
Scribe: Why don't you pick one of them. Which one do you think you like to tell for other boys and girls?
Child: Um, I think I would write like the camping one [I].
Child: (begins dictation) I went to church camp. And when me and my brothers and my grandparents got there we went and find this place where you eat in the morning. And after we went inside the … after we went inside the place [I], we went to our cabin. The next morning, we, I got my orange whistle [II]. And after I got my whistle I went outside to play. And I saw three dogs. And that night everyone at church camp went outside for the camp fire. And we sang a lot of songs and before we roasted marshmallows we sang another songs. And then we got to roast marshmal-

lows and I accidentally put my too close to the fire and it was on fire. And I said, "It needs another one. Throw it off." That's it [III].

Scribe: Okay. That's a good story. Now let me read it back to you in case you want to make any changes or add anything. (Scribe reread)

Child: That part's funny [III]. And I think they will enjoy that [III].

Scribe: I think it's really funny. That's a nice story.

Child: Will everyone in this door, place get one [II]?

Scribe: No, we are going to give it to you.

Not only did the children advance in metacognition categories I and III, they also demonstrated substantive growth in categories II and IIa. Overall, these children were able to monitor closely their dictation (e.g., "Did you really write that?" "I should have said that, right?' "Do you forget to put the other 'C'?") and constantly made self-regulatory utterances (category II) that clarify and elaborate the messages in the text while also attending to audience needs (e.g., "then I go, (self-corrects) get in order," "He, I mean, his name is Franklin … ," "grandma, my grandma," "I think I want to take out 'I forgot'," "My dog sleeps like him, like my cat," "We rode bike around the pool— the swimming pool," "and I like to go ppssh [noise made when diving into water] … but I can't say that on that [referring to story]"). Similarly, the children's other-regulatory speech (Category IIa) communicated clear, explicit directives to the scribe and showed strong concerns for the substance of the text content and audience needs (e.g., "Put 'no girls allowed' [in the story]," "You don't have to cross any more out," "Write it down," "Can you erase that stuff?" "[scribe puts in her side remarks in the story in parenthesis, the child notices that and says] What's that say? … No, [take] that [pointing to the word 'examiner'] out," "I want to take that off (pointing to the word 'grandpa' in the text)," "Take out 'that's all'"). Another example from Ted follows.

(Scribe prompts child to dictate)

Child: (dictates using dictation intonation) It was Christmas. Now, I am … (inaudible)

Scribe: What did you tell me?

Child: Old.

Scribe: Old?

Child: I forgot to tell you [I].

Scribe: OK. You tell me.

Child: (resumes dictation). Now, I'll, I, now I will eat [I].

Scribe: Eat? OK.

Child: (continues) my breakfast and before I can go, (self correct) go [II] …

Scribe: (checking by repeating) before I go, OK.

Child: (continues dictation) to school.

Scribe: to school.

Child: (continues) I like school when it is Christmas. Umm [I] … And (pause) and [I] … we, we, I go to the computer lab [II]. I will type my name first and then make a story for a friend and then I'll, I am done before that all … [II]

Child: (aside) I can hardly see the "b" [III].

Scribe: You can hardly see the "b"? It's there. (pick up the child's last dictated words) before that … .

Child: (continues) I always walk to

lunch. I get in …

Child: (aside) You know, I can't see the "i" [III].

Scribe: You're right. I can't see it either. Let's see. Let's see if we can move this over so we can see it. There it is.

Child: (continues) and then I go, (self-corrects) get in the order [II].

Scribe: (checking by repeating) the order

Child: (continues) and then we walk to the lunch room.

Child: (aside) It's almost lunch time.

Scribe: That's right. It is.

Child: Did you put that down [IIa]?

Scribe: No, I didn't. Did you want me to?

Child: Nope.

Scribe: Okay?

Child: (continues) And it was lunch time. And we walked and walked …

Scribe: (repeating) walked and walked, huh …

Child: (continues) and we walked out. Then we ate. And then, then, then it … [I]

Child: (aside, noticing computer screen) "It" [IIa]

Scribe: Um, hmmm. There's "it."

Child: (continues) It was time to leave the lunchroom. At that very moment, we walked at, at the classroom and we had play time. We did the puzzles, (aside to scribe) puzzles [IIa], and legos, and …

Child: (aside, referring to computer screen) What is it doing [III]?

Scribe: It's moving over, that's why.

Child: (continues) and, and … [I]
Child: (to scribe) I can't see "a", can you [III]?

Scribe: No, I can't see it either, but it's there. (repeats child's last word) and …

Child: (continues very slowly, each word given separately) and the games and we did the books. We did the computer. And we did combinations …

Scribe: (checking on word) combinations?

Child: (continues) pluses, and the numbers from, (corrects) and the numbers … [II]

Scribe: Um, hmm.

Child: (repeats) and the numbers. (final tone)

Scribe: Okay?

Child: (continues) And we went to art. And we made, made (pause) made people [I], animals, and fishes, and lions, and more fishes, and made … we made paper [II].

Scribe: Paper

Child: (aside) That's a "p" right there [IIa].

Scribe: Yes, that's the "p."

Child: (continues) And we made houses on paper. We was done and when we, we went back to our room [I], we got a drink. And we went to our classroom.

Scribe: (repeats) … went to our classroom. Okay?

Child: (repeats We went to our classroom. And we took our class,our classroom went, and we was getting ready to go home. And we walked and walked and got on the bus and we sat down and we waited to get off the bus. And that's all (III).

(Scribe offers to reread and invites edits)

Child: I don't want to add anything.

To summarize, this study shows that the Reading Recovery participants exhibited statistically significant and qualitatively impressive growth during the enrichment experience, not only in their knowledge about self, task, and task related strategy, but also in their regulatory capacities to gain control over text content and audience needs. Further evidence of such growth is furnished in the Appendix.

Discussion

The study's research questions were all addressed. The first question asked if at-risk children exhibited evidence of regulatory talk indicative of self-appraisal and self-management. The results from this study clearly suggest that the vast majority of the RR children already had developed some early forms of metacognition at entry to the RR program. The finding runs counter to the more traditional view that often associates metacognition only with maturation and more proficient learners (Garner, 1994; Paris, Wasik, & Turner, 1991). It also corroborates Vygotsky's (1962) view that "the child about to enter school possesses, in a fairly mature form, the functions he must next learn to subject to conscious control" (p. 90).

The second question asked if there were quantitative and qualitative differences between the entry and exit sessions in the RR children's metacognitive utterances. This study offered substantive evidence of such growth. Specifically, at the exit session the children developed a much clearer sense of themselves as readers and writers, became more cognizant of the literacy task in which they were engaging, and were more proficient in using language (i.e., private regulatory speech and other-regulatory speech) to regulate strategic control over text content, structure, and audience needs. It is also worth noting that, by the end of the RR experience, the participants have seemingly developed a clearer sense of what a good story should entail. This suggests that the extensive opportunities to read and talk about interesting stories with a knowledgeable other as provided in the RR lessons may have helped these at-risk children internalize essential features of storybook language.

Vygotsky (1962) observed that "school instruction ... plays a decisive role in making the child conscious of his own mental activities." (p. 92). It is reasonable to suggest here that the expanding regulatory capacities of the RR participants may be due, at least in part, to the RR experience. The magnitude of such growth has been interpreted from both Vygotsky's (e.g., Clay & Cazden, 1992; Pinnell, et al, 1994; Schmitt, et al, 1994) and British social theorist Basil Bernstein's (e.g., Cazden, 1995) perspectives. First, RR lessons feature one-on-one instruction that is embedded in a positive, considerate, and encouraging environment. According to Brown (1956), language and literacy development is, in a unique sense, "a process of cognitive socialization" (p. 247). The finely-tuned "scaffolding" (Bruner, 1981) available in RR lessons facilitates growth of higher mental functions within an ever advancing 'zone of proximal development'. Second, as "a mixed system" (Cazden, 1995), RR lessons integrate explicit with holistic instruction in that RR teachers encourage children to notice, explore, borrow, and reflect on critical features of the written language while immersing them in rich literacy environments.

In recent years, there have been suggestions (Delpit, 1986, 1988) that an instructional model such as RR can be especially fruitful when used with minority populations who are yet to acquire a "secondary" (Gee, 1989) or academic discourse, one that is linguistically and functionally distinct from the children's home discourse. For this reason, a third research question was asked if the magnitude of metacognitive growth was significantly related to factors such as gender, race, and family income. The results from this study indicated that, statistically speaking, girls did not gain significantly more than did boys, that African Americans did not gain significantly more than did European Americans, but that low income did gain significantly more than did middle income categories. Although it is still premature to conclude with certainty, due to small sample size, imbalanced design and lack of a control group, that RR works or does not work better for one group traditionally labeled as most "at-risk" (i.e., the economically disadvantaged), this study appeared to suggest that it might. However, it is also possible that because the measurement of change (gains) is involved in this study, the ceiling effect is at work. The middle income children entered the RR program with much higher metacognition scores than their low income peers.

It is important to note that at the end of the RR program the mean differences of metacognition scores between the various subgroups (male and female, African American and European American, and low income and middle income) have been considerably reduced. This can be observed from Table 2. For example, while the African American children trailed their European American peers by 0.11 at the entry session of the RR program, both groups were roughly equal at the exit session (i.e., 0.49 for African Americans and 0.52 for European Americans). The magnitude of the differences between male and female was also reduced, almost by half, during the RR experience (i.e., from 0.11 to 0.06). It is interesting to note that although the gap between the low income and middle income remained relatively big at the exit session, the direction of difference was reversed. That is, while the low income group trailed the middle income group by 0.17 at the entry session, the former outscored the latter by 0.14 at the exit session. Taken together, this study suggests that the RR experience may be at least partially responsible for the dramatic reduction in group discrepancies. It also suggests that RR may be especially effective in helping high at-risk children accelerate to or even surpass the level of their peers in terms of gaining metacognitive control.

Limitations and Implications

A number of cautions need be exercised in interpreting the data presented here. First and foremost, the small sample size (17) and imbalanced design (in cell numbers) limit any generalization over and beyond the characteristics of the current population. Second, since no control or comparison groups were used in the study, it could be argued that the reported metacognitive growth may not be due solely to the RR experience, but is possibly also an outcome of natural development, regular school instruction, or some combination. In fact, in late spring in their regular classrooms, some of the RR children were still receiving reading instruction in the basal primer, others were in the first reader, and one was in a literature-based program. The difference in the children's regular classroom instruction may also have contributed to the differential outcome described in the study. Third, as noted earlier, there exists some potential dangers associated with measurement of change. For example, ceiling effects may be at work in gain scores. That is, there is always a limit to the amount one can gain during the treatment period. When a particular group of participants already have high scores at the entry level, they might gain comparatively less during the treatment period than the one with low entry scores. Examination of the data did reveal that the European American, male, and middle income groups all had higher` metacognitive scores at the entry session to Reading Recovery than the African American, female, or low income groups, respectively (see Table 2).

These limitations suggest directions for future research. Further investigation may use a larger, more varied, and balanced sample and employ control and/or comparison groups. Such studies should contribute to a better understanding of the complex relationships between instruction and learning and between metacognitive/literacy growth and various sociocultural factors. More importantly, they should offer fresh guidelines that will enable teachers to make more informed instructional decisions.

Finally, Vygotsky's theory about children's developmental education (see Davydov, 1995 for an excellent overview) and the supportive finding of this investigation grant schools and teachers a more prominent role in fostering young children's cognitive development. As the Reading Recovery model (Pinnell, et al, 1994; Schmitt, et al, 1994) suggests, it is imperative that teachers involve children in extensive reading and writing while simultaneously engaging them in conversations that range from casual talk to deliberate explanations about features of written language. Teachers should also encourage children to notice, explore, borrow, and reflect on language, and they should foster the development of children's literacy skills using productive examples and in functional, communicative contexts.

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Appendix: Samples of Children's Metacognitive Growth During RR Experience

Karen (African American, female, low income)

Entry Session (Metacognition Score = 0.25)

1. Scribe: Do you want to add anything? Child: Ummm … - - - - - - - - (I)
2. Scribe: (rereads child's dictated story, missing the phrase "he eats")
   Child: He eats. - - - - - - - - (IIa)
3. That's all. - - - - - - - - (III)

Exit Session (Metacognition Score = 0.75)

1. My family is (pause) … is nice to me. - - - - - - - - (I)
2. Don't spell it with a C, spell it with a K - - - - - - - - (IIa)
3. If I would, (rapidly) if I would not (regular pace) act silly. - - - - - - - - (II)
4. … . to my grandpa (says period). - - - - - - - - (III)
5. (fairly fast and normal phrasing) My auntie bought me all kind of stuff.
   (repeats slowly, word by word) My auntie bought me all kind of stuff. - - - - - - - - (II)
6. Hmm. - - - - - - - - (I)
7. That's all I know. - - - - - - - - (I)
8. Oooh, one more. - - - - - - - - (I)
9. My dog sleeps like him, like my cat. - - - - - - - - (II)
10. Scribe: You want "him," OK.
    Child: Like him, (spell) H-I-M. - - - - - - - - (IIa)
11. Where is him? - - - - - - - - (III)
12. That's all I know. - - - - - - - - (I)
13. That's all. - - - - - - - - (III)
14. I want to take that off (point to grandpa on computer screen). - - - - - - - - (IIa)
15. And pick Grandma. - - - - - - - - (IIa)
16. Grandma, my grandma. - - - - - - - - (II)
17. Grandma, (begin to spell) G-R-A-N-D-M-A - - - - - - - - (III)
18. That's all. - - - - - - - - (III)

Linda (European American, female, middle income)

Entry Session (Metacognition Score = 0.42)

1. Does paper come out of this thing? - - - - - - - - (III)
2. Hmmm, I don't know. What else? - - - - - - - - (I)
3. Oh, Yeah I got it. - - - - - - - - (I)
4. Is that pretty good? - - - - - - - - (III)
5. Scribe: (Reread) I have some frogs.
   Child: No, no. I have a yellow bucket. - - - - - - - - (IIa)
6. Scribe: And then it started raining and a frog came - - - - - - - -
   Child: a mom frog came hopping along - - - - - - - - (IIa)
7. And I asked, keep asking my dad … - - - - - - - - (II)
8. Scribe: Anything else you want in your story?
   Child: Umm. (pause, then thoughtfully) Yeah. - - - - - - - - (I)
9. My, I have a next door neighbour … - - - - - - - - (II)
10. that has a cat, a baby kitten. - - - - - - - - (II)
11. And the, and that baby kitten is gray - - - - - - - - (II)
12. and it has, it has a little bit of white on. - - - - - - - - (I)
13. And, and when I hold it, it runs away … . - - - - - - - - (I)
14. Scribe: (repeats while writing) "And when I hold it, it runs away"
    Child: If I keep moving - - - - - - - - (IIa)

15. And (pause), and, and when I stay real still on holding, he starts falling asleep. - - - - (I)
16. Scribe: (repeats while writing and with upward end intonation inferring accuracy check) "he starts falling asleep?"
    Child: Yeah, kinda shifty, (aside tone) so it won't be Figgly, Piggly. - - - - - - - - - - - - (II)
17. Scribe: You want that in your story?
    Child: Yeah. Figgly, Piggly. - (IIa)
18. Type it. - (IIa)
19. I also like … Piggly, um, that it? - (I)
20. Scribe: (reread) I got a horse. Her name (pause)
    Child: Kiwa - (IIa)
21. Scribe: Is there anything you want me to change?
    Child: Ummm … . - (I)
    Scribe: Is that OK?
    Child: Un unh (appearing to be answering the first question because no edits were offered)

Exit Session (Metacognition Score = 0.61)

1. It's called, ummm … . - (I)
2. It's called Lion and My Horse. - (III)
3. And I'm just gonna say "And My Turtle " now, because I don't want to get anymore animals on it.
4. And (repeats strongly) … and - (I)
5. And my turtle, oops, OK. - (II)
6. Ok, Stop there. - (IIa)
7. By Linda Nessell - (III)
8. Well, I have a horse. - (I)
9. Hmm, Black Beauty, it's a B (referring to screen). - (III)
10. But my puppy is the /thing/ … (to self) is a, the, yeah. (to scribe) /thing/ - - - - - - - (II)
11. Scribe: Excuse me, let me make a note here. Ok (rereading) but my puppy is the … Child: (repeats more clearly) thing - (IIa)
12. (repeats as scribe corrects text) Is the thing I just want to get rid of. - - - - - - - - - - - - (II)
13. Do you bring stories to all the kids? - (II)
14. I guess I made good stories. - (III)
15. Child: But I'm
    Scribe: (clarifying) I'm
    Child: Yeah, am. - (II)
16. He, I mean, his name is Franklin … - (II)
17. You're typing that in there (means the part about book and Franklin). - - - - - - - - - (III)
18. Oh, let's see. - (I)
19. I tipped up my doll. He is under her head. (aside to scribe: It is true, he was.) - - - - (II)
20. Do you want me to write more story? - (III)
21. Umm, I really don't have any much stories. - (I)
22. Why are you writing that? - (IIa)
23. Well … . - (I)
24. That's the story. I guess I'm done now. - (I)
25. Did you really write that? - (III)
26. Scribe: (rereads the story) … . I really don't have much stories.
    Child (point to last line): You can erase this - (IIa)
27. Can you erase that stuff? - (IIa)

Reading Recovery in the United States: More than a Decade of Data

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Abstract

There is considerable information available to evaluate Reading Recovery's impact on children's literacy development and the professional development of teachers. The purpose of this article is to review the thirteen years of replication data that support Reading Recovery's effectiveness, as well as to address the questions most often raised by critics regarding (a) the length of the teacher training program, (b) the cost of implementation, and (c) the long-term effects of the program for children. Rationales are explicated for leaders of the program requiring that certified teachers enroll in a year of academic coursework and participate in continued professional development, teach the lowest achieving children one-on-one, and collect and report data on a daily basis to document the effectiveness of the program.

Reading Recovery (RR), an early intervention literacy program, has been operating in the United States for more than a decade. During that time, nearly a half million children have received instruction and 15,000 teachers have participated in training. Because of the extent of the development of this program, there is considerable information available to evaluate its impact on children's literacy development and the professional development of teachers.

The purpose of this article is to review the extensive replication data that support RR's effectiveness, as well as to address the questions most often raised by critics regarding (a) the length of the teacher training program, (b) the cost of implementation, and (c) the long-term effects of the program for children. After a brief history of the development of RR, each of these areas will be discussed separately, and there will be a general call for programs to substantiate their effectiveness in the quest toward literacy for all children.

A Brief History of Reading Recovery

In September 1984, Professor Marie M. Clay, a New Zealand researcher and educator who originally designed the program, and Barbara Watson, current National Director in New Zealand, introduced RR to faculty at The Ohio State University and sixteen teachers in the

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Columbus Public Schools. This early intervention program provided intensive, individual help to the lowest achieving first grade students in six Columbus, Ohio schools. End-of-year data revealed that during the initial year of implementation, when all of the educators were learning the program, 67% of the lowest achieving children developed effective strategies for reading and writing and reached average classroom levels after 12-20 weeks of one-to-one instruction.

In July 1985, the successful results of the pilot study led the Ohio General Assembly to provide funding to establish teacher training sites in Ohio and to begin implementing the program throughout the state. By the start of the 1987 school year, RR was operating in 182 school districts throughout Ohio. When the number of low-progress first grade children who were reaching average reading levels increased from 73% in 1986 to 79% in 1987, long-term benefits of the RR program became a possibility. The Ohio General Assembly and the Ohio Department of Education have continued to fund the training and ongoing professional development of RR teachers and teacher leaders for 12 years.

In 1987, the U.S. Department of Education's National Diffusion Network (NDN) recognized RR as an exemplary research-based program and provided funding to make the program available to school districts in other states. Four educators from outside of Ohio enrolled in the year-long RR teacher leader course at The Ohio State University during the 1987-1988 academic year. These educators returned to their home sites the following year to begin training teachers to deliver the program to children. In 1996-97, the United States RR program was operating in 48 states, the District of Columbia, and some U.S. Defense Department Schools overseas. As reported in Table 1, the RR network by 1996-1997 includes 42 university trainers, 667 teacher leaders, 15,483 teachers, 3,241 school districts, and 9,815 schools.

Reading Recovery Evaluation Data: Replication Methodology

Replication of results represents a vital component of research and an important concept in the history and theory of research design (Campbell & Stanley, 1963; Kratochwill, 1978). Intervention research in such fields as medicine, social work, psychology, and education seemingly requires replication of results to an even greater degree (Hersen & Barlow, 1976; Neuman & McCormick, 1995). There are two main approaches to replication: (a) Systematic replication, which involves different investigators conducting the same study on different subjects with the same problem at a different location and at a later time, and (b) simultaneous replication, which is similar to the former, but being conducted at the same time (Gay, 1987).

While replication at a later time (i.e., systematic) is the standard approach, simultaneous replication, a research methodology designed by Frymier, Barber, Gansneder, and Robertson (1989), has been used effectively to assess students' academic achievements in widely separated geographical settings. For example, simultaneous replication was successfully tested as a methodology in the Phi Delta Kappa Study of Students at Risk (Frymier et al., 1989) by subjecting to common analytic procedures data that were collected in common ways with common instruments in 87 separate sites. The study enabled researchers from urban, rural, and suburban school districts to verify results by focusing on local analyses of data collected at the school level while still contributing to a large-scale study. To determine program effectiveness, RR has employed both types of replication methodology.

Data evaluating the original design of the program are monitored annually in New Zealand by the Ministry of Education (Kerslake, 1996). Since 1985 in the United States, the effect of the RR program has been replicated hundreds of thousands of times in thousands of schools with hundreds of thousands of individual subjects. In that time, approximately 15,000 RR teachers working individually with more than 435,000 low achieving first grade children from different cultures in urban, suburban, and rural school districts have documented similar results. That is, RR teachers, using the RR teaching procedures they learned through standardized professional training, have helped the lowest achieving first grade students reach average band reading levels after 12 to 20 weeks of individually designed and individually delivered instruction (Lyons, 1997). Essentially, children who were initially labeled "slow" learners were shown to be performing at average levels in reading, and some reports have indicated profits in other subject areas, as well (Lyons & Beaver, 1995). Furthermore, RR teachers in other countries such as Australia, Canada, The United Kingdom, New Zealand, and the U.S. Defense Department Schools overseas have produced notably similar results. According to Kratochwill (1978), repeatedly producing the same effect with different students in different settings increases confidence in a treatment or intervention, thereby providing substantial evidence of the effectiveness of RR tutoring.

As reported in Table 2, from 1985-1997, the RR program served a total of 436,249 children. Of that group, 313,848 had sufficient time to experience a com-

Table 1 U.S. University Trainers, Teacher Leaders, Teachers, School Districts, and Schools Participating in Reading Recovery from 1984-1997

Year	University Trainers	Teacher Leaders	Teachers	School Districts	Schools
1984-85	0	0	16	1	6
1985-86	1	3	58	23	35
1986-87	3	2	280	108	255
1987-88	3	45	531	143	227
1988-89	6	43	732	265	623
1989-90	11	54	1,163	332	892
1990-91	13	80	1,850	508	1,406
1991-92	19	155	3,164	798	2,336
1992-93	24	259	5,343	1,246	3,731
1993-94	33	388	8,182	1,905	5,523
1994-95	39	510	12,084	2,543	7,784
1995-96	39	625	14,153	2,939	9,062
1996-97	42	667	15,843	3,241	9,815

Note. Data from the National Evaluation Data Center, The Ohio State University plete program (defined as 60 lessons) and 81% reached criteria for successful release from the program; that is, they were performing within the average band reading group of their classroom. Such numbers represent extensive replication documentation, a hallmark of research reliability. Data documenting the impact of RR on student achievement are reported each year in local, state, and national evaluation reports. In addition, several other reports produced by RR professionals and others provide data to document three claims related to the effectiveness of the RR program.

Claim 1: Within 12-20 weeks of daily, one-to-one instruction, the majority of the lowest achieving first grade students can be placed in an average reading group in their respective first grade classrooms. Since 1984, data for every child served in the U.S. have been reported to the Reading Recovery National Data Evaluation Center at The Ohio State University and forwarded to the United States Department of Education. If we consider all students served, even for one day, 60% met the stringent exit criteria for success.

There is no checklist of specific criteria to determine that a child is ready for discontinuing because the goal of the program is to place the child in a classroom reading group in which he or she is predicted to make progress without further individual instruction. The level of performance will differ from child to child and from school to school (Clay,

Table 2 U.S. Reading Recovery Children Served, Program Children and Percentage of Children Discontinued from 1984-1997

Year	Served**	Program***	Discontinued****	%
1984-1985*	110	55	37	67%
1985-1986	230	136	99	73%
1986-1987	2,048	1,336	1,059	79%
1987-1988	3,649	2,648	2,269	86%
1988-1989	4,772	3,609	2,994	83%
1989-1990	7,778	5,840	4,888	84%
1990-1991	12,605	9,283	8,126	88%
1991-1992	21,821	16,026	3,499	84%
1992-1993	36,443	26,582	22,109	83%
1993-1994	56,077	40,493	33,243	82%
1994-1995	81,220	57,712	46,637	81%
1995-1996	99,617	71,193	59,266	83%
1996-1997	108,876	78,935	65,551	83%
Totals	436,249	313,848	259,777	81%

Note. Data from the National Evaluation Data Center, The Ohio State University

*Pilot year: RR teachers were in training.

**Served: Program children and children who entered Reading Recovery but did not receive a minimum of 60 lessons because they moved, were absent for extended periods of time, or the school year ended prior to completion of lessons. Column 1 is inclusive of the subcategory Program Children, column 2.

*** Program: RR children who received a minimum of 60 lessons or were discontinued prior to receiving 60 lessons.

****Discontinued: RR children who were released from the RR program reading within average band reading levels of the class.

1993). If the child is to continue to make progress, however, RR teachers must consider whether that child has acquired a system of strategies that helps him or her learn from further attempts to read and write. This system of strategies includes the ability to (a) control left to right directional movement, (b) match spoken to written words, (c) notice and correct errors when reading and writing, (d) notice discrepancies in responses by cross-checking one source of information (e.g., visual) with a different source of information (e.g., meaning or structural cues), (e) use many sources of information, and (f) detect and self-correct errors (Clay, 1993). If RR students acquire these strategies, assuming these strategies are the ones beginning readers must acquire, they should continue to make average progress in reading in the years after they complete RR.

Claim 2: Reading Recovery is more effective when compared to traditional one-to-one and small group remedial programs targeting low-achieving first grade students. Researchers Wasik and Slavin (1993) compared RR to four other one-to-one tutoring models that have been used to improve the reading skills of first graders who were at risk of failure: Success for All, Prevention of Learning Disabilities, The Wallach Tutoring Program and Programmed Tutorial Reading. Sixteen studies evaluating the effect of these models on student achievement revealed substantial positive effects of one-to-one tutoring in comparison to small group instruction. Wasik et al., (1993) reported "follow-up studies found that effects of tutoring were generally lasting and the results were more positive when reading instruction was based on a more comprehensive model of reading and when certified teachers (rather than paraprofessionals) were the tutors" (p. 178). The researchers also reported that RR is the only program that has documented long-term success without additional intervention and the only program that has assessed the quality of implementation across tutoring sessions and the effect this has on outcome data. Wasik and Slavin (1993) concluded that when compared to other one-to-one interventions, RR is at least as effective as the others, but one well-wrought study found it is more effective.

In 1988, the John D. and Catherine T. MacArthur Foundation funded an experimental study (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994) designed to compare the effect of RR to two alternative one-to-one treatments and one small group treatment, with Title 1 programs as control groups. The results of the study indicated that RR was the only group for which the mean treatment effect was significant on four measures: Dictation 2 (Clay, 1993); text reading (Scott Foresman, 1979); and two standardized tests, the Gates-MacGinitie Reading Test (1989) and the Woodcock Reading Mastery Test (1990). While the effectiveness of RR is not challenged, we need to know more about qualitative differences that exist between the teacher-student interaction during RR lessons and how to maximize Reading Recovery's effectiveness while minimizing the cost.

Claim 3: Reading Recovery greatly reduces the number of children targeted for placement in learning disability (LD) classrooms. Several studies have demonstrated that once RR is introduced into a school system, there is a sharp decline in the number of first grade students referred for learning disability screening and placement. For example, Lyons and Beaver (1995) reported that in the State of Ohio the number of RR program students referred for learning disability screening decreased from 1.26% to just 0.51% over a five year period. Furthermore, a national study demonstrated that the number of first grade students targeted to receive LD services was cut in half two years after RR was implemented. Specifically, prior to RR implementation, 59 (2.3%) of the 2,569 first grade students in the ten districts were referred for LD services. One year after RR intervention, 53 (2%) of 2,602 first grade students were referred for LD services and only 34 (1.3%) of 2,572 students were referred for LD services two years after the program was implemented (Lyons, 1994). Data reported to the United States Office of Education (Lyons, 1997) for the 1995-1996 academic year, indicated that only .02% of the 71,193 RR children who received full programs were referred for LD assessment.

Research suggesting that RR has the potential to reduce the escalating number of students retained and referred for learning disability testing and placement was cited in a report to the International Reading Association (IRA). The IRA report, *Learning Disabilities - A Barrier to Literacy Instruction* (1995), stated that "RR effectively teaches children to read … . Not only does it reduce the number of children who are labeled with learning disabilities, but it also significantly reduces the number of children who are retained in remedial reading programs" (p. 45). Furthermore, the program enables educators to separate first grade children who may be low achieving from those with more severe learning problems (Lyons, 1994).

Essentially, there is no question that RR works. Consider, for example, that Hiebert (1994) noted " … a high percentage of Reading Recovery tutees can orally read a first-grade text at the end of Grade 1 … ." (p. 21). Shanahan and Barr (1995) concluded, "Evidence firmly supports the conclusion that Reading Recovery does bring the learning of many children up to that of their average-achieving peers. Thus, in answer to the question 'Does Reading Recovery work'? we must respond in the affirmative" (p. 989). Most strongly, in *Classrooms That Work*, Cunningham and Allington said, "No other remedial program has ever come close to achieving the results demonstrated by Reading Recovery" (1996, p. 254). What is most often questioned, however, is the need for year-long training and continued professional development of teachers, the costs associated with the program, and evidence of the long-term effects of the early intervention using standardized measures. In the following sections I will address these three issues.

Year-Long Training and Continued Professional Development

Unlike many other programs for low progress students, RR is not based on one procedure or a set of materials to use for instruction. Rather, it is dependent on the customized instruction designed by a specially trained teacher who has developed a systematic knowledge and understanding of possible progressions in acquiring a reading and writing process. The teacher assists the reader in acquiring the strategies employed by successful readers.

In order to implement the RR program, qualified teachers enroll in a year-long course taught by a certified teacher leader at a training site in or near their school district. Through close observation of teacher and student interactions, guided by a skilled teacher leader, RR teachers learn to use observation techniques to determine where the student's literacy processing is breaking down and why. Extensive use is made of a one-way glass for demonstration and observation. By observing each other working with children behind the one-way glass, teachers become sensitive observers of children's reading and writing behaviors and develop skill in making moment-to-moment teaching decisions that help children use what they know to generate further understandings.

The RR teacher is responsible for teaching children who, despite one year of kindergarten, remain at the lowest achieving level of the first grade class. In order to accomplish this feat, teachers must customize every lesson to meet the idiosyncratic needs of the child by selecting from a wide range of books and helping individuals use their writing to assist in reading. Teachers also perform and record their own assessments of a student's progress in reading. During reading and writing tasks, teachers must select from an array of special techniques those that will help children develop effective problem-solving strategies that independent readers use. Students are taught how to predict, confirm, and understand what they read using all sources of information (e.g., visual, semantic, etc.) As they write, they develop strategies for hearing and recording sounds in words, composing messages, and for monitoring and checking their own reading and writing. During each lesson, the teacher carefully observes the child acting on a variety of texts and systematically records these observations to form the basis for the next lesson. Learning such a complex role takes time, commitment, much energy, and a rigorous training program.

Teachers in training continue working full-time in their school as they receive instruction in RR techniques. The most common arrangement during the training year and subsequent years is for teachers to spend one half day teaching RR students and the other half day performing other assigned duties (e.g., kindergarten, first grade, Title 1 teacher). Reading Recovery teachers working with four or five students for one half day will teach a total of 7 to 10 children, on average, every year. This represents 14-20 children per 1.0 FTE annually.

Following the training year, teachers meet several times annually with their teacher leader for continued professional development. In these sessions, teachers sharpen their observation skills and learn how to use these observations to design efficient lessons that will most effectively accelerate students' progress. Teachers are also given the opportunity to attend the annual national RR conference and a number of regional professional development institutes to further their theoretical and practical understandings of the reading and writing processes.

Leading authorities in school reform have recognized the quality of the RR training. In a discussion of the use of standards and assessments to support student learning, Darling-Hammond and Falk (1997) singled out RR as effective in helping students gain skills that make them successful and confident readers, including students whose first language is not English and many who have been identified for special education. Allington and Cunningham (1996) noted that "Planned professional development of this intensity is rarely encountered in school improvement efforts" (p.32). The knowledge and skill of the trained teacher is the critical element to RR; the element that distinguishes RR from other programs designed for low progress children; the element that may very well be the deciding factor that allows for the program's success.

After conducting a three-year study of RR, Kenneth Wilson (Wilson & Daviss, 1994), a Nobel Prize winning physicist and educational reformer, concluded that in three ways the program can encourage the process of educational redesign:

> First, it proves that a well-designed educational program can be replicated among teachers and schools across as wide array of locations and cultures and still yield uniformly superior results. Second, it indicates that an investment of money and effort in educational design can earn dramatic rewards — if it's made in a properly researched and designed program that offers thorough teacher training and support. Third, it shows that when educators find a program that meets these two criteria and proves that it can earn a good return, schools are willing to make its adoption a budget priority. Reading Recovery is the best evidence yet of the direct link between good design and educational excellence. (p. 76)

American society prides itself on the advancement of technical skills in medicine. Physicians are expected to engage in life-long learning through continuous professional development; some physicians (e.g., surgeons) require more advanced, long-term training than others. You would not want a surgeon performing a heart transplant on a loved one using the same techniques he or she learned 20 years ago in medical school. You would expect the surgeon to use more effective, proven procedures that he or she learned in advanced surgical training institutes. Advanced life-long professional development for teachers is rare. Some teachers continue to use the same teaching methods they learned in undergraduate teacher education programs.

Reading Recovery teachers should have more specialized continuous professional development because they are required to work with the most difficult to teach students. In order to do so successfully, teachers must learn specialized skills which require specialized training. The RR initial and ongoing professional development program for teachers breaks away from the expected norm. In doing so, there are long term gains for school districts, administrators, teachers, students, and parents.

The best investment this nation can make is in massive ongoing professional development for teachers. Renewing, reeducating, extending, and enhancing the professional expertise of the teachers who carry out the daily work of educating children is critical to school reform. In her presidential address at the American Education Research Association annual meeting, Linda Darling-Hammond (1996) stated that "recent research illustrates that money makes a difference in the quality of education, especially as it is used to pay for more expert teachers, whose levels of participation and skill prove to be the single most important determinant of student achievement (Armour-Thomas et al., 1989; Ferguson, 1991). Furthermore, students' right to learn is directly tied to their teachers' opportunities to learn what they need to know to teach well" (p. 6).

The Cost of Reading Recovery

In *No Quick Fix: Rethinking Literacy Programs in America's Elementary Schools*, Allington & Walmsley (1995) concluded that " … the more expensive RR program provides the best evidence of long-term success for the largest population of at-risk students served" (p. 262). However, some researchers (Hiebert, 1994; Shanahan & Barr, 1995) report RR costs too much. Others (Dyer & Binkney 1995; Lyons & Beaver, 1995, Moriarty, 1997; Pinnell, Lyons & Jones, 1996) argue that it costs much less than retention and long-term placement in learning disability, special education, or remedial reading resource rooms. Furthermore, the initial start-up cost of the program (i.e., teacher leader training, installation of a one-way mirror, tuition, books and materials, and the initial training of RR professionals) is a one-time expense.

Can the cost for RR be justified? Those who agree it can be justified weigh the cost of a 30-minute RR lesson for 12 to 20 weeks against the cost of 45 minutes of daily remedial reading groups for more than 1 year. They weigh the cost of a 30-minute RR lesson for 12 to 20 weeks against 5 hours of daily learning disability (LD) classes for 4 to 5 years. They weigh the cost of a 30-minute RR lesson for 12 to 20 weeks against a year of repeating first grade. Educators can expect to spend about 50 percent more to educate a low achieving child (Levin, 1989). The Massachusetts State Legislature reached a similar conclusion after conducting a study of five years of special education placements in the state. The study revealed that between FY 1990 and FY 1995, total enrollment in special education increased by 8.3% statewide (MA Superintendents Association Task Force, 1997).

Furthermore, an examination of the relative cost of the increased enrollment in regular and special education during this period revealed that expenditures per full time equivalent (FTE) enrollments in special education increased by almost $4,000 from FY 1990 to FY 1995, while they increased by only $305 in regular education. The impact of these increases statewide has been dramatic, resulting in an additional expenditure of $61 million on special education in FY 1995 alone. The report also revealed that expenditures for special education increased at a greater rate than expenditures for regular education in 71% of the Massachusetts school districts with only 3% of the districts reporting a decline in special education expenditures between FY 1990 and FY 1995.

A cost-effectiveness study of special education referrals, Title 1 placement, and retention was conducted in Fall River, Massachusetts (Assad & Condon, 1996). The report revealed that over a two-year period (1993-94, 1994-95) the Fall River RR project served 186 students at an actual cost of $2,362 per pupil. Based on school history, it was estimated that without the RR program, 45%-50% of the students would have been referred for Special Education; 45%-50% would have been referred for Title 1 services and approximately 5.7% of the students would have been retained. Total cost for special education services in this school district is $17,830 per pupil; total cost of Title 1 services per pupil is $4,860; total per pupil cost for retention is $3,843. Using this information, Fall River administrators determined a projected five year cost of $1,746,145 if RR had not been operating in the district. The RR intervention for this same five year period would cost $483,271, creating a net savings of $1,262,874 that could be reallocated for a variety of other services needed for students within the district.

Similar cost savings were calculated in Medford, Massachusetts. Data collected in this urban school district over a five-year period revealed that five of the 175 first graders who were successfully released from RR, representing fewer than 3%, have been referred to Special Education. Prior to RR implementation, it was estimated that the vast majority of these students would have been targeted for special education (Moriarty, 1996).

After conducting a seven month investigation, the Massachusetts legislative team concluded that RR research shows a high degree of success in teaching low progress children how to read and write; defers children from special education, reduces the number of children retained, and is cost effective because for every $3 invested in RR, a school system saves $5. In 1997, the Massachusetts legislature allocated $500,000 for early intervention and identified RR as a research-based program that would qualify for funding (Moriarty, 1997).

When examined as a whole, the net costs of RR are justified by the value of all that is saved. First of all, the program is producing effective results time and time again, as evidenced by replication data. Second, the program cuts the cost of retaining a child or placing a child in a learning disability resource room for up to 4 and 5 years. Third, the program cuts the cost of long-term help in remedial reading resource rooms. Fourth, in preventing more serious problems from occurring, the program cuts the cost of ongoing expensive psychological assessment and treatment. The school district saves money in the long run. To all of these monetary savings, however, must be added the incalculable value of what the program does for the thousands of boys and girls who are spared from a lifetime of feeling inadequate because they cannot read and write well enough to keep up with peers and benefit fully from classroom experiences.

Evidence of the Long-Term Effects of Reading Recovery Using Standardized Measures

Even since the early years of RR in the U.S., there has been interest in determining whether children who are successfully released from the RR program continue to make average band progress in reading and writing. In 1988, the Ohio Department of Education commissioned an outside evaluation team to evaluate long-term effects of the RR program (Anderson, 1988). Over a three-year period (1984-1987), the evaluation team examined the effect of RR on the lowest achieving first grade Ohio children's reading progress. The evaluation team was comprised of nationally known experts in literacy and chaired by Dr. Richard Anderson, at that time the Director of the Center for the Study of Reading at the University of Illinois. The report revealed that 81.8% of RR children who received a full program made accelerated progress and performed within the average band range for their classes. Furthermore, Anderson (1988) found that children "retain their gains and continue to make progress at least 2 years after the intervention" (p.42).

The long-term effects of any intervention are difficult to measure because there are many intervening variables which can influence children's progress (e.g., quality of subsequent classroom instruction, promotion and disciplinary policies, student's health, mobility, and individual life circumstances). As a matter of fact, few implementers or proponents of any intervention programs collect follow-up data. Critics of RR argue that most follow-up studies use Clay's assessments to document long-term effects of the program. However, a number of state-wide follow-up studies conducted in the United States have utilized standardized measures to document that former RR children maintain their literacy gains and make average or better progress up to three, four and five years after the intervention ended.

Researchers at New York University tested a total of 1,596 second grade children and 604 third grade children who were successfully discontinued from RR between 1990-1993. The nationally standardized Slosson Oral Reading Test (1990) was administered to the total number of RR children and random sample children who participated in a follow-up study in the state of New York. The findings revealed that RR children's mean achievement levels on the Slosson word recognition test reflected average performance for students who were at the end of second grade, and slightly higher than average performance for those at the end of third grade, based on national norms. These results are impressive given that, only one and two years before, they were the lowest achieving students in their first grade classrooms.

Furthermore, 93% of the second graders and 98% of the third graders scored at or above grade level on a measure of text reading. The results of the four-year study demonstrate that the majority of the children in New York who had a full series of lessons and were successfully discontinued from RR in first grade sustained their gains and performed as well as their grade-level peers one and two years after completing the program. These results indicate that RR students in New York, after becoming average or better readers in first grade, continued to make significant progress in reading after the specialized teaching is discontinued (Jaggar, Smith-Burke, Ashdown, Simic, 1996).

A follow-up study conducted in the state of Massachusetts (RR Annual Report, 1996) produced similar results. In the Spring of 1995, 122 children who had successfully discontinued from RR during 1993-1994 and 143 non-RR children were randomly selected for a grade two study. The two groups of second grade children were compared on four measures: text reading, a story retelling, a dictation task, and the Slosson Oral Reading Test (1990). When compared with randomly selected non-RR students, the discontinued second grade RR students performed within the average band of achievement on text reading, story retelling, and the word recognition subtest on the Slosson. In May 1996, in addition to the same four measures, the Gates MacGinitie Reading Test (1989) was administered to the same groups of children who, at this time, were completing third grade. The achievement of discontinued RR students was compared to that of a random sample of third graders. The mean text reading level of 30.7 (roughly equivalent to a grade 4 basal reader level) was achieved for former RR students and 31.0 for the random sample students providing evidence that both groups of students were reading well above grade level.

Furthermore, the former RR students, who were identified as the lowest achievers in grade one, were more successful at retelling stories than their random sample peers. Ninety-five percent of RR students and 92% of random sample students retold an end-of-grade-three story at an adequate to exceptional level. Scores from the Slosson Oral Reading Test (1990) and the Gates MacGinitie Comprehension Test (1989) demonstrated that the former RR students performed within the random sample's average band of achievement.

In a cross-sectional evaluation, researchers at Texas Woman's University (RR Texas State Report 1988-1996) studied second, third, and fourth graders who had successfully discontinued from Reading Recovery during their first grade year. Four assessments were used to measure the literacy performance of former RR students: a test of text reading, a written retelling, the comprehension test of the Gates MacGinitie Reading Tests (1987), and the reading subtest of the Texas Assessment of Academic Skills (TAAS). The results indicated that when compared to a random sample of their peers, former RR students placed well above grade level in text reading and written retelling and maintained their gains through fourth grade. Additionally, by fourth grade, former RR students compared well with their peers on the TAAS: 69% of the RR students and 76% of the random sample group of students had passing scores on TAAS. On the Gates MacGinitie Comprehension Test (1989), 67% of the RR students and 71% of the random sample of fourth grade students had comprehension scores within the average range. These results indicate that former RR students are more similar to a random sample of peers on standardized measures when in grade four.

The follow-up studies from New York, Massachusetts, and Texas report on former RR students who were discontinued from RR; that is, these children reached the average reading levels of their peers and thus successfully completed the program in first grade. Due to limited resources, researchers in these three states could not follow every RR student who was served in the program in first grade. An Ohio fourth grade follow-up study, however, reports data on three groups of RR students: (a) those who were successfully discontinued from the RR program in grade one, (b) those who were referred for additional support, and (c) those who were served in RR but received fewer than 60 lessons (State of Ohio 1996-1997 Report).

The researchers in the Ohio study examined two cohorts of these three types of students: the first cohort received RR services in 1991-1992; the second cohort received RR services in 1992-1993. The children's overall proficiency scores on the Ohio Test of Fourth Grade Proficiency were examined for each cohort. The results revealed that when compared to all fourth grade children in the State of Ohio, 71% of the total group of RR students (including those who had fewer than 60 lessons, whether they were discontinued or not) in the first cohort scored above proficiency in reading and 72% scored above proficiency in writing. Similar results were reported for the second cohort of children. Seventy-five percent of all RR students who were in first grade in 1992-1994 scored above proficiency on reading and 67% performed above proficiency on the writing measures. These findings suggest that the total number of RR students served made substantial gains in reading and writing by fourth grade.

When one considers that in every follow-up study, the random sample comparisons are drawn from a general population of regular education students who were not selected for RR and compares these students with former RR students who were once the lowest achievers in a first grade classroom, it is clear that the program does what was it was designed to do—brings the hardest-to-teach children to a level of literacy achievement where they are full participants in classroom literacy programs. Furthermore, scores on two nationally standardized tests, the Slosson Oral Reading Test (1990) and the Gates MacGinitie Reading Test (1989), and on two statewide assessments, the Texas Assessment of Academic Skills and the Ohio Test of Fourth Grade Proficiency, collected at the end of grades two, three, and four, suggest that former RR students, in particular those that have been successfully discontinued (released) from the program, maintain their gains and continue to make reading and writing progress.

Conclusion

We are continually inundated with media reports that the number of school-aged children who cannot read and write continues to rise. Local, state, regional, and federal legislators, parents, business owners, and other stakeholders are demanding changes in school curricula and practices to remedy the situation. In a comprehensive review of literacy programs in America's elementary schools, Allington and Walmsley (1995) argue that early reading achievement predicts future success or failure in life and strongly recommend early intervention programs for students who are failing to learn how to read.

Within this growing consensus for early intervention, there is continuing disagreement about several issues, including: (a) using professionals or paraprofessionals, (b) the amount of training necessary, (c) whether and how to monitor the fidelity of the local implementation of the program, (d) student-teacher ratio (e.g., one-to-one or small group), and (e) whether and how to collect data to document individuals' progress. Reading Recovery is decidedly consistent on all of these. Reading Recovery uses professionals who are required to be trained for a year, the pupil-teacher ratio is one-to-one, the local implementation is carefully monitored on a constant basis, and data are collected on individuals' reading and writing progress on a daily basis and reported annually to document the effectiveness of the program.

Any primary teacher can attest to the enormous range of differences in what children know and can do when they begin schooling. These individual differences suggest that the quantity, quality, and intensity of instruction needed to meet a child's idiosyncratic needs must differ. Allington and Walmsley (1995) encourage educators "to think of individual differences less as indicators of how much or how little children might learn, and instead think of them as indicating how much intensive instruction will be needed to accelerate their literacy development and move them alongside their peers. As long as we believe that not all children can learn to read on schedule, we will fail to embrace instructional programs that demonstrate how wrong that tradition is" (p. 6). Perhaps that is what is happening in American elementary schools today—Reading Recovery supporters are challenging 100 years of conventional school organization and instructional practice.

In summary, RR operates within educational systems through three key program elements: (a) an intensive, daily, one-to-one, thirty minute program for the lowest achieving children in grade one; (b) an initial graduate level year-long training and continuous professional development program through which teachers refine their knowledge and skills in using proven techniques; and (c) a standard research program whereby individual data are collected on all students, even those who are served for one day, to monitor results continuously, to provide support for participating teachers, and to develop guidelines for implementing the program with integrity.

Reading Recovery has an approach to program evaluation that is coherent and which has employed both systematic and simultaneous replication extensively. I would encourage those who question RR to publish their program descriptions and their data along with replication information so that stakeholders will have substantive information for decision-making.

Essentially, after all of the objections to RR have been identified, after all of the arguments against the program have been weighed, we must face the hard and simple fact that no other program currently operating in the United States can produce thirteen years of data on every single child who was served in the program to document its success. At no time in recent history has there been more pressure to produce results. At no time in our history has there been a program that can produce more than a dozen years of replication data to document successful results.

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* follow-up studies

Biography

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Student Aspirations: Reading Recovery May Influence More than Literacy Development

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Abstract

The effects of the Reading Recovery (RR) program on at-risk children's literacy development have been well documented. However, the effects of the Reading Recovery program, which combines one-on-one attention with an individualized approach, may go beyond the realm of reading and writing to affect students' aspirations. This paper represents an effort to connect practices of the RR program with known conditions for student aspirations. The implications of this work suggest that investing effort in RR may affect not only children's literacy development, but also their aspirations, which are generalizable to other areas of the children's lives.

The Reading Recovery (RR) program has been evaluated extensively with regard to its impact on children's literacy development. The original studies were conducted by Clay (1985), the founder of the program, but her results have been replicated around the world (e.g., Pinnell, Lyons, & DeFord, 1996). The program has been studied in terms of its cost effectiveness (Dyer, 1992) and how it compares to other early literacy programs (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). In this paper we argue that its effects may be even more far-reaching, to the aspirations of the students who participate.

RR is an early intervention program for first graders who are at risk for literacy failure. Children are selected for the program based on both the recommendations of the kindergarten teacher and their performance on a series of literacy-related tasks (Clay, 1993a). The program involves intensive, daily, one-on-one sessions between the at-risk child and the RR teacher for 30 minutes. One of the defining characteristics of the program is its individualized nature. The RR teacher gathers detailed information regarding each child's strengths and weaknesses each day, and uses such information in planning the next day's lesson. Experienced teachers go through a year of intensive additional training to become RR teachers. Reading Recovery training includes the study of theories of literacy acquisition and detailed methods of data collection. Careful observation allows a RR teacher to notice and to build upon the cognitive operations a child already possesses, but which may not be evident in a classroom setting.

Such one-on-one instruction, targeted to each child's specific needs, allows at-risk children to accelerate their learning, catching up to their peers. The extra

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instruction is short-term; students are released from the program when they have achieved the average literacy level of the other first graders in the class and have demonstrated they are capable of continuing to develop their reading and writing competencies without special tutoring (Clay, 1991, 1993a, 1993b).

Aspirations are an individual's ability to identify and set goals for the future, while being inspired in the present to work toward those goals (Quaglia & Cobb, in press). Although not dealt with directly by Clay, it seems plausible that children's aspirations may be affected by their experience in Reading Recovery. In what follows, we will attempt to link the RR program characteristics and outcomes with what is known about student aspirations. After relevant research on student aspirations has been described, theoretical explanations for our contention that RR may be expected to affect the aspirations of children will be delineated, and qualitative evidence to support this supposition will be provided.

Research on Student Aspirations

The National Center for Student Aspirations (NCSA) has studied the effects of various factors on student aspirations. While much of the research has focused on older children and adolescents, there is no reason not to expect parallel processes in younger children.

Through research and practical application in schools, conditions that impact the development of student aspirations in schools have been identified. Specifically, the NCSA (1995) has identified eight conditions that positively affect student aspirations, including, as described below: *achievement*, *belonging*, *curiosity*, *empowerment*, *excitement*, *mentoring*, *risk-taking*, and *self-confidence*.

Achievement includes effort, accomplishment, citizenship, and perseverance.

Belonging involves a relationship between two or more individuals, characterized by a sense of connection, support, and community.

Curiosity is characterized as inquisitiveness, an eagerness and strong desire to satisfy the mind with new discoveries.

Empowerment means allowing students to take control and to assume responsibility for their academic, social, and personal actions.

Excitement refers to being "worked up" about something, being emotionally involved, and having an intense experience in the learning process.

Mentoring involves ensuring students have someone they can talk to and confide in during both pleasant and difficult times.

Risk-taking involves a deliberate and thoughtful activity which includes choosing healthy and sensible options.

Self-confidence is characterized by belief in oneself to be successful.

Primary functions of the NCSA involve survey development along with program delivery and dissemination. Most of the survey development has been conducted with middle level and high school students. The current survey includes two scales that represent aspirations (ambition, inspiration), two scales for student self-description (achievement motivation, general enjoyment of life), and eight scales related to school climate conditions (achievement, belonging, curiosity, empowerment, excitement, mentoring, risk-taking, and self-confidence). The middle-level survey includes items such as:

> "During class time, the things I learn are important to my future.";
> "My teacher makes class fun.";
> "My teacher makes me feel comfortable when I ask for help."

The survey is intended for group administration, and the results of the survey are used by schools to assess their students' level of aspirations, allowing research based interventions to be targeted appropriately on the aspirations relevant to aspects of school climate that students traditionally perceive in a relatively negative light (Plucker, in press).

Reading Recovery and Student Aspirations

Although Clay, the founder of the RR program, does not discuss student aspirations in her work, a strong argument can be made that participation in RR likely will affect the conditions for student aspirations, either directly or indirectly. Following is a discussion of how each condition for aspiration relates to Reading Recovery tutoring.

The primary expected outcome of participation in the RR program is increased literacy achievement, and it is expected to occur at an accelerated rate compared with other children in the classroom. Clay (1993) writes, "the child … has been making very slow progress and has been dropping further and further behind his classmates. In order to become an average-progress child, he would have to make fast progress, faster than his classmates, to catch up to them" (p. 8). Throughout the program, children are encouraged to make efforts and praised for their perseverance. The goal is for them to become independent learners, capable of continuing to learn on their own. These aspects of achievement are especially similar to those necessary for aspirations. Because, according to the NCSA, achievement is one of the preconditions for aspirations, RR would be expected to affect student aspirations positively, through increased achievement, as well as student awareness of success.

Secondly, the relationship between the RR teacher and the student is one of mentoring. The RR teacher shares the student's successes as well as challenges. It is imperative that a positive relationship be established between the child and the RR teacher. Regarding the first two weeks of the RR program where such a relationship is built, Clay (1993b) writes:

> Hold his interest, bolster his confidence, make him your co-worker. Get the responding fluent and habituated but even at this stage encourage flexibility, using the same knowledge in different ways. Confidence, ease, flexibility and, with luck, discovery are the keynotes of this period which I have called "roaming around the known." Do not move too soon; be sure the foundation is firm and the child confident. (p. 13)

During the initial two weeks of RR, in establishing a relationship characterized by mentoring, the RR teacher is expected, according to Clay, to affect the child's self-confidence and sense of curiosity, two more of the NCSA's eight conditions for aspirations. RR, therefore, would likely affect student aspirations directly through these channels as well.

The self-confidence Marie Clay described would follow naturally from increased achievement. That is, a child who can achieve more, and who can recognize his or her achievements, may become more confident as a result. False praise from teachers will be recognized and not valued, but children whose literacy skills are truly improving will know, and this will be reinforced by teachers and parents who also see the improvement. Actual achievement, coupled with praise, will raise a child's self-confidence.

Before a child is discontinued from the program, he or she needs to have established a "self-extending system", a phrase Clay (1993b) uses to describe children's ability to continue to add to their repertoires of literacy strategies on their own in the classroom. She explains when a child has a self-extending system, he or she can be thought of as empowered:

> Acceleration is achieved as the child takes over the learning process and works independently, discovering new things for himself inside and outside the lessons. He comes to push the boundaries of his own knowledge, and not only during his lessons. The teacher must watch for and use this personal searching on the part of the child … . The teacher will foster and support acceleration as she moves the child quickly through his programme … but the teacher cannot produce or induce it … . It is the learner who accelerates because some things which no longer need his attention are done more easily, freeing him to attend to new things. When this happens at an ever-increasing rate acceleration of learning occurs. (p. 9)

Thus, empowerment is an additional route through which RR may affect student aspirations.

Risk-taking is essential to the development of empowerment. The RR teacher provides a supportive, trusting environment that allows children to feel safe enough to attempt difficult tasks, while risking being wrong. Learning to take risks is fundamental to all children's success, according to Clay (1993b). She writes,

> the programme sets the highest value on independent responding, and this must involve risks of being wrong … . The goal of the teaching is to assist the child to produce effective strategies for working on text, not to accumulate items of knowledge. A teacher who allowed only for correct responding would not be allowing the child to learn self-correcting behaviors! … Any theoretical position which includes self-monitoring and self-correcting as significant behavior in reading or in writing implies the existence of near misses, uncorrected responses and sometimes corrected responses. The important thing about the self-corrections is that the child initiates them because he sees that something is wrong and calls up his own resources for working on a solution. (p. 15)

Concomitantly, RR may positively impact children's excitement about school and learning. Tutoring sessions are conducted in such a way that children are challenged, while at the same time are capable of meeting those challenges. While students may struggle with literacy learning in the classroom in the early stages of their program, they are able to enjoy the time in RR because they can be successful from the beginning. This, of course, changes over time as children's progress is accelerated and they can derive excitement from their classroom environment. Such success in RR and then in the classroom likely affects children's sense of belonging, as well.

Qualitative Evidence

As part of program evaluation for the RR program in one northern New England state, parents, classroom teachers, administrators, and RR teachers responded to open-ended survey questions, and they rated the program along dimensions of quality. The survey was distributed to 1429 parents, 535 classroom teachers, 250 administrators, and 250 RR teachers, and was returned with a response rate of 82%. Respondents from all categories rated the program favorably, with a number commenting that it had affected children's attitudes and aspirations as well as their literacy skills.

Parents' reactions to the program were almost singular in their support. Many expressed appreciation for the changes in their children's skills, such as: "The program is the best thing that could have been done for our son and I am very pleased that the school cares enough about its children to have this program."

Some parents noted the accomplishments of their children after the RR program, such as: "My son certainly has learned new ways of figuring out the words that he doesn't know and is more willing to try to do things on his own."

Other parents noted improvements in their children's attitudes about school and their self-esteem after the RR program. Examples include: "She enjoys school more and feels that she can help the teacher with the younger children." "My son has become more confident in participating in class. His self-esteem has definitely been boosted." "[Child] went from feeling 'stupid' to having a lot of confidence in her reading abilities. She is very proud of her skills and is always looking for someone to read to."

Many classroom teachers' comments reflected positively on their own children's progress. One teacher wrote: "RR has made teaching reading much smoother in my class. Children who need extra help receive it and many of them are able to move quickly enough to become independent readers and writers."

Some comments from classroom teachers also indicated that RR may have affected students' attitudes and self-esteem. For example, two teachers wrote: "New confidence and self-esteem has helped in all classroom areas not just in reading" and "Increased self-esteem about learning to read; attitude shift from 'I can't' to 'I can'; increased independence in the classroom."

In addition to supporting the program's effects on early literacy, some administrators also noted changes in children's self-esteem after taking part in RR. For example: "The children with whom [RR Teacher] has worked have made significant gains in self-confidence and in other subjects, not to mention impressive gains in reading."

Although far from being scientifically collected, we believe these comments are significant because they were unsolicited. Respondents were asked to give their reactions to the RR program and its impact on children's literacy development, but were not asked to comment on self-esteem, aspirations, or attitudes. Yet many noted gains in the very areas we know to be critical to the development of aspirations as discussed here. Seemingly, RR is affecting the conditions necessary for aspirations in a positive way, as evidenced by the comments collected through these surveys.

Future Directions in Research

We suggest that Reading Recovery and other early interventions for at-risk children be evaluated for their effects on the whole child, as well as on specific areas of scholastic development. We are currently working to develop an instrument that would measure the eight preconditions for aspirations in K-2 children. The conditions described earlier in this paper have been validated with older children and adolescents. These may or may not be the preconditions for aspirations among young (i.e., K-2) children, but it nonetheless represents a starting point. Once established, such an instrument would allow quantitative research in this area to move forward.

There are a number of hurdles to measuring any attitudinal construct in the early elementary school population. First, because children in the early elementary grades may have shorter memories and shorter attention spans than older children (Hughes, 1984), surveys for this age group must be shorter in length than those for other age groups.

Secondly, the cognitive abilities and language development of young children constrain the use of potential items as well as overall survey length. Many words and phrases which would be appropriate in surveys for adults or even adolescents, cannot be used because the young respondents would not understand them.

Finally, the construct of "social desirability" is a problem when measuring attitudes of young children. Social desirability refers to a tendency to give answers that make oneself look good (Robinson, Shaver, & Wrightsman, 1991). In a research context, this can translate into answers that reflect how the respondent wants to be viewed, rather than how the respondent feels most of the time. Gilberts (1983) suggests this is a difficulty when measuring self-esteem in children, but that it is most problematic in children below age four.

McKenna and Kear's Elementary Reading Attitude Survey (1990) notably appears to have overcome some of these hurdles. Their twenty-item scale measures children's attitudes about reading. All items begin with the phrase, "How do you feel. . .". For example, one item asks, "How do you feel when it's time for reading class?" To make the response categories more accessible to young children, the scale features the comic strip character Garfield in four poses, roughly equivalent to the responses, "Very Happy", "Happy", "Unhappy", and "Very Unhappy". The survey was field tested with over eighteen thousand first through sixth grade children, and it demonstrated both internal consistency and known-groups validity. The "attitudes about reading" construct is quite different from aspirations, however, the characteristics of a successful instrument are often generalizable across constructs and this work may apply to the assessment of aspirations.

Although the eight conditions for aspirations have not been measured in early elementary school aged children, at least one study attempted to measure a related construct in this population. Traynelis-Yurek & Hansell (1993) measured the self-esteem of first graders at risk for reading failure following participation in a program designed to help them learn to read and write (the program may have been Reading Recovery, but the authors did not specify). Although the methodology used in the study does not allow strong conclusions to be drawn regarding either the validity or the reliability of their proposed instrument, Traynelis-Yurek and Hansell made a notable attempt at creating an instrument suitable for young children. Their most important finding was that the children discriminated between and among items. That is, all the items showed variance. Although far from a developed instrument, their results suggest distinct possibilities for measuring young children's aspirations.

In a time of scarce resources and an abundance of programs to implement, it is important to recognize those programs that may have a positive impact on the whole child. RR may be such a program. Its successes as an early intervention program for children with minimal literacy skills are well documented. However, by design or not, we see a program that operationalizes the conditions which influence the development of student aspirations.

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Table Of Contents

Scaffolding Emergent Writing in the Zone of Proximal Development
Elena Bodrova and Deborah J. Leong 1

Common Roots and Threads: Developmentally Appropriate Practice, Whole Language, and Continuous Progress
Wendy C. Kasten, Elizabeth Monce Lolli, and Judith Vander Wilt 19

The Early Development of a Self-Extending System in Writing
Christine Boocock, Stuart McNaughton, and Judy M. Parr 41

An Examination of Sustaining Effects in Descubriendo La Lectura Programs
Kathy Escamilla, Martha Loera, Olivia Ruiz, and Yvonne Rodriguez 59

Scaffolding Emergent Writing in the Zone of Proximal Development

Elena Bodrova, McREL—Mid-Continent Regional Educational Lab
Deborah J. Leong, Metropolitan State College of Denver

Abstract

Scaffolded Writing is an innovative method of supporting emergent writing based on Vygotsky's theory of learning and development. This article discusses the theoretical notions underlying the method: the zone of proximal development, scaffolding, materialization, and private speech. A description of Scaffolded Writing is given along with classroom examples. A case study of 34 at-risk kindergarten children is reported that illustrates the effectiveness of this method in supporting children's emergent writing. Changes in the use of Scaffolded Writing by the participants of this study provide insight into the mechanisms of the transition from assisted to independent performance within the zone of proximal development.

In recent years, there have been many and varied successful applications of the Vygotskian concept of the zone of proximal development (ZPD) to the area of literacy learning (e.g., Burkhalter, 1995; Combs, 1996; Steward, 1996). These applications, often developed as instructional programs, generally demonstrate the viability of providing children support within their ZPD and describe various ways to increase their level of performance beyond what learners may achieve on their own or with instruction that is out of their range of capabilities.

Most of the programs use the assistance of more capable others, likely peers or teachers, to support the learning of individual children. Consistent with Vygotsky's own emphasis, the process and the outcomes of the interactions between the child and the other participants in the dialogue are typically presented in a verbal form, through different forms of discourse (e.g., Au, 1997; Brown, Ash, Rutherford, Nakagawa, Gordon, & Campione, 1993; Cazden, 1981; Moll, 1990). In the work of Vygotsky's followers, such as Daniel Elkonin and Pyotr Galperin, it was found that for young children, the progress within their ZPD can be further enhanced when not only social interactions are present, but also special instructional techniques are utilized (Elkonin, 1963, 1969, 1974; Galperin, 1969, 1985,

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1992). Going beyond the original Vygotskian theoretical insights by incorporating the research and practical applications of colleagues and students of Vygotsky can significantly expand our current understanding of the concept of the ZPD and perhaps strengthen its effect on educational practices.

It is the purpose of this article to describe "Scaffolded Writing"—a Vygotskian-based technique developed to support and investigate emergent writing. Scaffolded Writing is a method inspired by the work of Elkonin and Galperin but applied to an area that neither of them originally studied—self-generated messages of young writers. The Scaffolded Writing method involves the use of two techniques—*materialization* and *private speech*—that became the center of instructional interventions used by Vygotskians in Russia, but which are not equally popular in Western education. The Scaffolded Writing method will be discussed both as a way to examine children's literacy development in the ZPD and as a teaching technique that might be used in a classroom setting.

Before discussing materialization, private speech, and Scaffolded Writing, we will review the relevant concepts of the zone of proximal development and scaffolding, and their application to the teaching and learning of young children.

Relevant Concepts

The Zone of Proximal Development

The zone of proximal development is the Vygotskian concept that defines development as the space between the child's level of independent performance and the child's level of maximally assisted performance (Bodrova & Leong, 1996; Vygotsky, 1978). Abilities that are fully developed exist at the level of independent performance. Those skills that are on the edge of emergence and that can be enhanced by varying degrees of assistance are located within the ZPD (see Figure 1).

As a new skill or concept is mastered, what a child can do one day only with assistance, soon becomes his or her level of independent performance (see Figure 2). For example, if today a child can write her name only

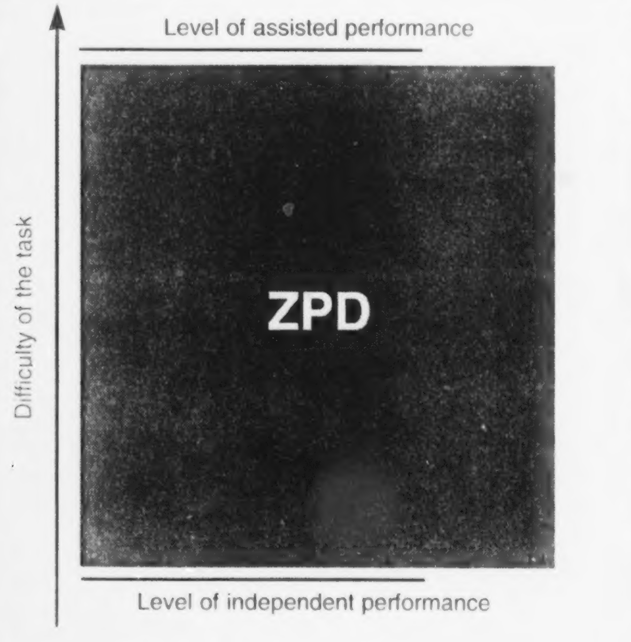
Level of assisted performance
ZPD
Difficulty of the task
Level of independent performance

Figure 1: Zone of Proximal Development

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when a teacher shows her how to form each letter, tomorrow the same child may need only initial prompting to finish the rest of writing by herself. At any given moment, there are tasks that lie outside of the child's ZPD, such that no amount of assistance will facilitate learning. In the above example, writing an entire story is clearly outside this particular child's ZPD.

Although the concept of a ZPD was later broadened by contemporary Vygotskian scholars to serve as a general metaphor for human development in a sociocultural context (e.g., Newman & Holzman, 1993), in this paper we will use the more narrow definition of the ZPD used by Vygotsky himself to tie together instruction and development. For Vygotsky (1934/1987),

> Instruction is only useful when it moves ahead of development. When it does, it impels or wakens a whole series of functions that are in a stage of maturation lying in the zone of proximal development. This is the major role of instruction in development. … Instruction would be completely unnecessary if it merely utilized what had already matured in the developmental process, if it were not itself a source of development. (p. 212)

Scaffolding as a Way to Facilitate a Child's Transition from Assisted to Independent Performance

The term "scaffolding" was coined by Bruner (Wood, Bruner, & Ross, 1976) to specify the types of assistance that make it possible for learners to

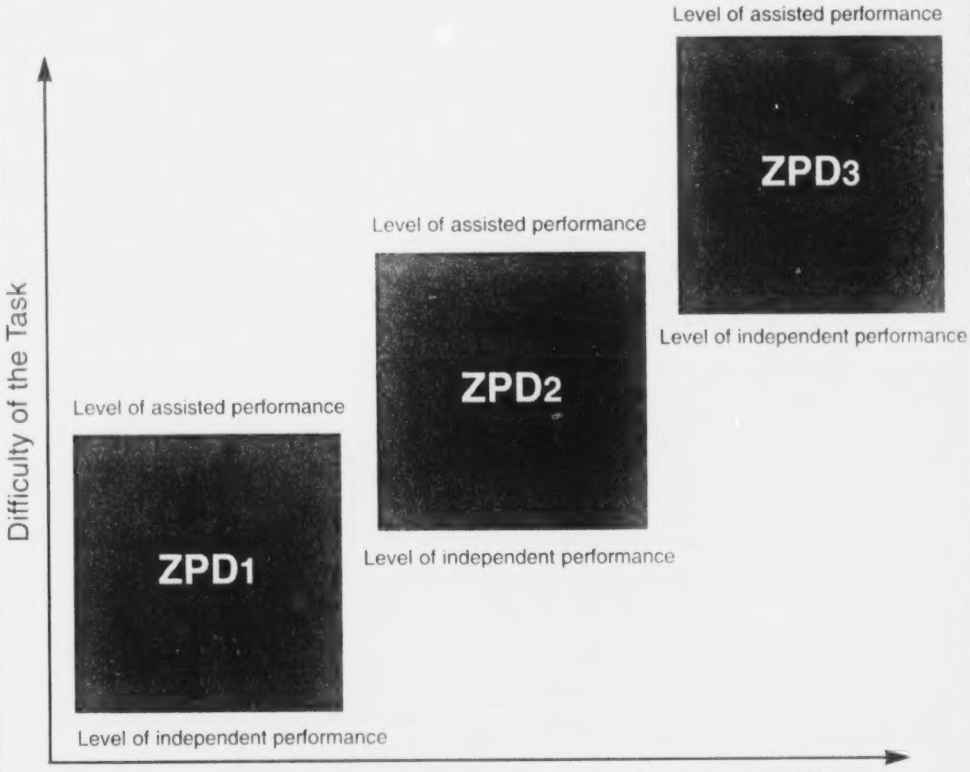
Level of assisted performance
ZPD3
Level of independent performance
Level of assisted performance
ZPD2
Level of independent performance
Level of assisted performance
ZPD1
Level of independent performance
Difficulty of the Task
Time

Figure 2: Changes in a Child's ZPD Over Time

function at higher levels of their zones of proximal development. The term "scaffolding" is currently used to describe how an expert can facilitate the learner's transition from assisted to independent performance (e.g., Berk & Winsler, 1995; Meyer, 1993).

According to Bruner, the "scaffolds" provided by a teacher do not make the task itself easier, but rather make it possible for a learner to complete the task with support. Initially, the maximum amount of teacher assistance is needed to elevate the student's performance to its highest potential level. Gradually, the level of assistance decreases, as the learner becomes capable of doing more independently. At this point, the teacher "hands over" the responsibility for the performance to the learner, removing the scaffolds. Now the learner can function independently at the same high level at which he or she was previously able to function only with assistance or scaffolds (see Figure 2). In Vygotsky's words, "What the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1987, p. 211).

For scaffolding to be successful, teachers must help learners develop strategies they can apply to novel problems they will encounter, not just answers to specific questions. For example, when a child is confronted by an unknown word, rather than telling the child the word, the teacher may scaffold problem solving by prompting the child to use strategies within his or her range, such as using pictures for clues. Eventually, the child no longer needs the teacher's help and can activate the necessary strategy unprompted.

Scaffolding is a relatively recent term that originated in the West, and was not used by Vygotskians themselves. The idea of scaffolding, however, resonates well with another concept that was used by Pyotr Galperin, Daniel Elkonin, and their colleagues. Their concept of "step-by-step formation" (Galperin, 1969, 1985) emphasizes gradual transfer of responsibility from an expert to a novice with the help of two specific tactics—*materialization* and *private speech*. Thus, materialization and private speech provide what Western psychologists would describe as the scaffolding needed to support learning.

Materialization and Private Speech—Two Ways of Providing Assistance Within a Child's ZPD

Materialization, as described by Galperin (1969), refers to the use of tangible objects and physical actions to represent or "stand for" a concept or strategy as the *mental* action is being learned. Materialization helps the child focus on the critical aspect of the concept or strategy that is to be internalized. The physical action not only parallels the mental action the children will soon internalize, but actually shapes this action (Galperin, 1969, 1985, 1992). For example, when children use Cuisinare rods to construct a set equal to ten, the physical action of composition parallels the mental mathematical principle of addition. As the children work with these Cuisinare rods, the concept of number becomes clearer. Another example involves the use of a "word window" where children have a frame they use to place around each word as they read. The window materializes the concept of "word" as a separate entity, that which is contained within the frame. The child's action of

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moving it to frame one word and then another, shapes the mental process of seeing words as distinct entities.

If materialization is applied correctly, it enables learners to function at the highest levels of their zones—to perform tasks that are more difficult than ones they can perform without materialization. Moreover, the use of materialization facilitates the development of new mental actions that allow learners eventually to function at the same high level without assistance. Not all tangible objects have equal value in terms of materialization, however. Only the ones that affect the essential components of the new emerging competence are useful. In the above example of establishing word boundaries, the use of a pointer may not provide support that is as strong as the use of a "word window" for a particular learner. This is because the movement of the pointer allows for both continuous and discrete motions. If the learner slides the pointer under the words in a continuous motion—not stopping at each word—the materialization may not focus attention on the discrete character of "word", thereby not supporting the learner adequately.

Furthermore, in order for materialization to lead to substantial gains in performance, it must be coupled with private speech (Galperin, 1969, 1985, 1992). Private speech not only assists the child in using the materialized actions and objects effectively, it is also a necessary step in appropriation and in the transition from assisted to individual functioning (Bodrova & Leong, 1996; Galperin, 1969). Private speech is defined as self-directed, regulatory speech. It involves giving oneself audible directions on how to proceed. Very common in young children, it can be seen most prominently when they are faced with a new and difficult task (Berk, 1992). In the above example of Cuisinare rods, children will often count aloud— "Put 1.. 2.. 3.. 4.. 5.. 6.. 7.. 8.. 9.. 10 of these." At the early stages of learning to read, children may read aloud all the words, but even as they start reading "silently," they still occasionally revert to private speech when faced with a difficult or especially long word.

Both materialization and private speech are temporary supports. Their use becomes unnecessary once the mental actions are internalized by the children. Eventually, children will not need the Cuisinare rods to help them solve number problems and they will stop using the pointer or a "word window" to read. Materialization and private speech are consistent with the definition of scaffolds (Wood, Bruner & Ross, 1976) because they are designed to provide assistance at the beginning and to be removed as learners' abilities develop.

Several studies conducted in the Vygotskian tradition have demonstrated that materialization and private speech produced the greatest gains if used by young children who require external support for most of their mental actions (e.g., Galperin, 1985; Leont'ev, 1932/1994; Venger, 1986). For example, Daniel Elkonin applied these two tactics in his well-known study of phonemic awareness in preschool- and kindergarten-aged children (Elkonin, 1963, 1974). This study, as well as its numerous replications in Russia, demonstrated that the use of materialization and private speech significantly increased the children's ability to analyze words into sounds even before children were introduced to the

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letters of the alphabet. Children who were taught using Elkonin's program learned to read faster than those who were not, and scored better on the measures of metalinguistic awareness (Bugrimenko & Zukerman, 1987; Elkonin, 1963, 1971; Karpova, 1955; Khokhlova, 1955). One adaptation of Elkonin's technique is used in the West, primarily by Reading Recovery teachers. In this program, children push pennies into "sound boxes" or "letter boxes", drawn by the teacher, that represent the sounds or letters as they analyze a spoken word into its component phonemes and find letters to represent them (Clay, 1993).

Development of Emergent Writing in Kindergarten

Prior to a description of the scaffolded writing technique that is the focus of this article, a brief review of the literature on emergent writing is in order. According to Sulzby (1996), most kindergartners primarily use drawing, scribbling, and non-phonetic letter strings as they write. The use of invented spelling at this age is rare in general, but some children begin to mix invented spellings in with their scribbles and letter strings. Only a few children can be expected to use invented and conventional spelling—primarily when writing isolated words. Sulzby reports that when children become very excited and motivated, they tend to revert back to more immature forms of writing, although the content and length of their stories increase. This reversion to less-advanced appearing forms was also confirmed by the research of Marie Clay (1975).

In a detailed analysis of children's writing, Gentry (Gentry & Gillet, 1993) identified distinct levels of emergent writing. The progress from one level to the next one is marked by the changes in letter formation, completeness of phonemic representation, and correspondence between oral and written messages. At the first level, messages are represented by scribbles, marks, and pictures. Children at this level do not produce letter-like forms. At the next level, which Gentry called "pre-communicative", children have some control of letters, but do not use them to represent sounds. The letters or letter-like forms are written but the writing cannot be read by anyone but the writer, and cannot be reread many days later even by the writer. The next level is referred to as "semi-phonetic" where letters are used to represent the word, but the phonemic representation is not complete. For example, one to three letters are used to represent the entire word. At this stage, conventional directionality is present. A more advanced stage is "phonetic" when children use letters to represent all of the sounds in the word including vowels. Writing at this stage contains some words that are spelled phonetically correctly. The invented spelling of the next level, which Gentry termed "transitional", is based on children's memory of visual patterns rather than sound patterns. Although children may use some correctly spelled words while at phonetic and transitional levels, consistent use of conventional spelling does not appear until the final "conventional" level, typically attained when children are much older than 5 years of age (Gentry & Gillet, 1993).

A review of the literature on emergent writing revealed that there are no norms for expected levels, but, according to Sulzby (1992), there does exist a general, descriptive, developmental progression of the characteristics of writing. In terms of the zone of proximal development, such a progression might suggest that, when provided appropriate scaffolding, a child might be expected to write using more developmentally advanced forms than the same child could do when unassisted. Scaffolded assistance in the child's ZPD may also affect the quality of the child's message, perhaps making it longer and more meaningful.

Scaffolded Writing—a Vygotskian-Based Method to Support Emergent Writing

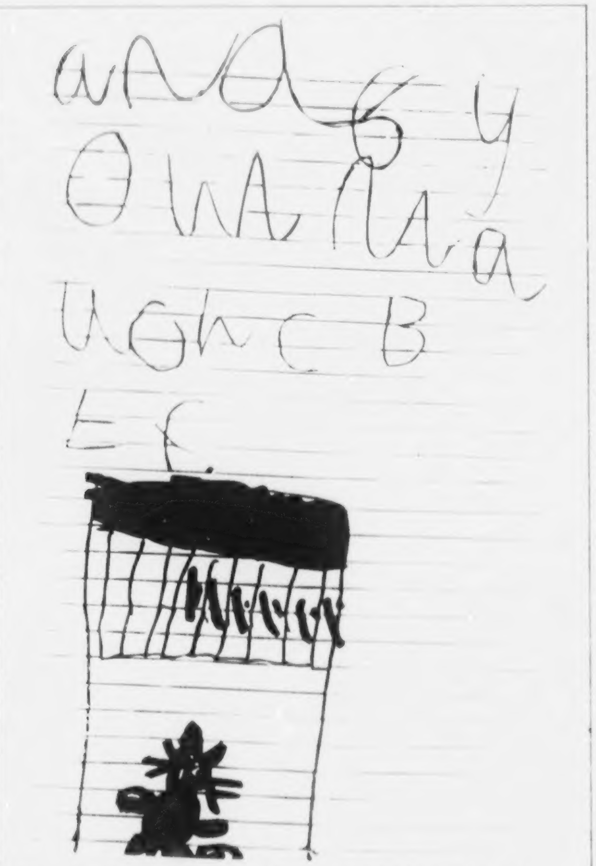

Figure 3: Amanda's Sample of Unassisted Writing

In an effort to support practice with Vygotskian theory, we developed a technique called "Scaffolded Writing" which uses a combination of materialization and private speech to support emergent writing. In Scaffolded Writing, a highlighted line is used to materialize each unit of oral speech (Bodrova & Leong, 1995). Like the Cuisinare rod that materializes the concept of number, the highlighted line materializes the concept of "word." The child creates his or her own message and then—with teacher's help or independently—draws a highlighted line to stand for each word in the message. Private speech coincides with the drawing of each line so the link between the spoken word and its materialized line is made clear. The child then fills out the empty lines, placing scribbles, letter-like forms, or letters on the line to stand for the word in the message.

Scaffolded Writing is intended to be a temporary tool. Just as in other types of scaffolding, the technique begins with the assistance of someone else providing support, then is followed by a period when the children use the scaffolds on their own as a transition to self-assistance, and, finally, all scaffolds are eliminated as learners can perform the task unassisted.

Teacher-assisted use of Scaffolded Writing. In the beginning, the teacher provides maximum assistance for writing by demonstrating the use of the highlighted lines and by modeling how to use private speech. The teacher

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asks the child to say aloud the message he or she wishes to write and repeats the message for the child to confirm its accuracy. Then the teacher and the child repeat the message together as the teacher draws a line to stand for each word in the message. At this point, the teacher returns the piece of paper with only the lines drawn on it back to the child. The child then recreates the message by writing the "word" on each of the lines using any symbol within his or her developmental level (e.g., scribble, letter-like form, letter, or letter combination). While the child is writing, the teacher may help the child with "sounding out" the words or encourage the child to use an alphabet chart. The teacher-child interactions are relatively brief and can be carried out not only in one-on-one settings, but also when the teacher works with a group of 4-6 students.

The following classroom vignette illustrates the process. Amanda, the little girl featured in this vignette, attended a kindergarten classroom and typically produced several writing samples a week during journal writing or other literacy activities. Amanda' s example of writing before she began to use Scaffolded Writing is shown in Figure 3. This serves as a baseline with which to compare her writing using Scaffolded Writing.

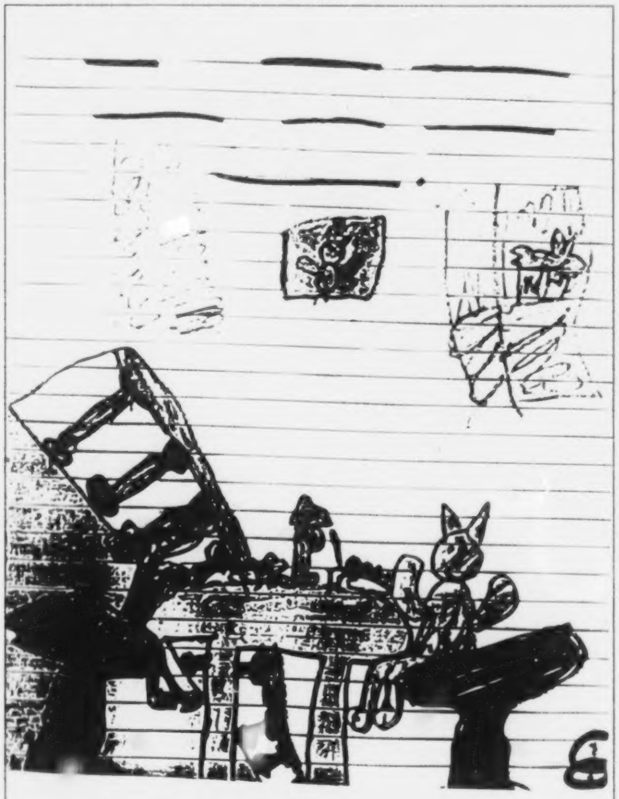

Figure 4: Teacher's Materialization of Amanda's Self-Generated Message

Ms. Martinez asked Amanda to draw a picture and think of a story to go along with the picture. When the picture was finished Ms. Martinez said, "We are going to draw lines with the highlighter to help you remember what you want to write. We will plan your story one sentence at a time. Tell me what you want to write." Amanda said, "The cats are sitting at the table." Ms. Martinez said, "You want to write, "The cats are sitting at the table?" Amanda said, "Yes." Ms. Martinez repeated the sentence slowly making a line with a highlighter pen for each word in the message (See Figure 4). The lines were made to fit the size of the word—the line for "the" was smaller than the line for "table."

Then Ms. Martinez said, "Let's go back over our plan (pointing to the lines). You said you wanted to write, "'The cats ...'" With teacher prompts, Amanda pointed to each highlighted line and contin-

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ued the sentence all the way through to "table." After the teacher was sure that the materialization matched the child's private speech, Ms. Martinez handed the paper with the lines to Amanda, and said, "Now that you can remember what you want to write, go ahead and write it out on the lines. Say each word as you write it on the line to yourself. If you can't remember the word, go back to the beginning of the message and say the sentence aloud again."

Amanda wrote on the lines. After Amanda finished writing the word "sitting," she couldn't remember the next word she wanted to write. She started reading the sentence aloud from the beginning, pointing to each word as she read. Rereading the first words in the message prompted the word "at." With each new word, she would whisper the sentence from the beginning. See Figure 5 for the completed message.

After writing "words" on all of the lines, Amanda was asked to read her message back. She pointed to each word as she read exactly what was written on the lines.

Independent use of Scaffolded Writing. During this stage, the children use Scaffolded Writing independently, with no help from the teacher. They may still consult the alphabet chart, other children, and the classroom dictionary for sounding out words, but the message planning, creation of the lines, and writing are completed without any assistance. Children continue to use the strategies they have learned at the teacher-assisted stage. If their message consists of more than one sentence, they plan one sentence at a time, and add other ideas later. They also continue using private speech, both while planning their message and later, when they cannot remember a certain word. As they reread their sentences, they make occasional self-corrections when they notice a mismatch between the number of words in their oral language and the number of lines on the paper. In this case, they continue trying to read the sentence to reconstruct their ideas and to remember the missing words. When they reread the entire message on their own, they

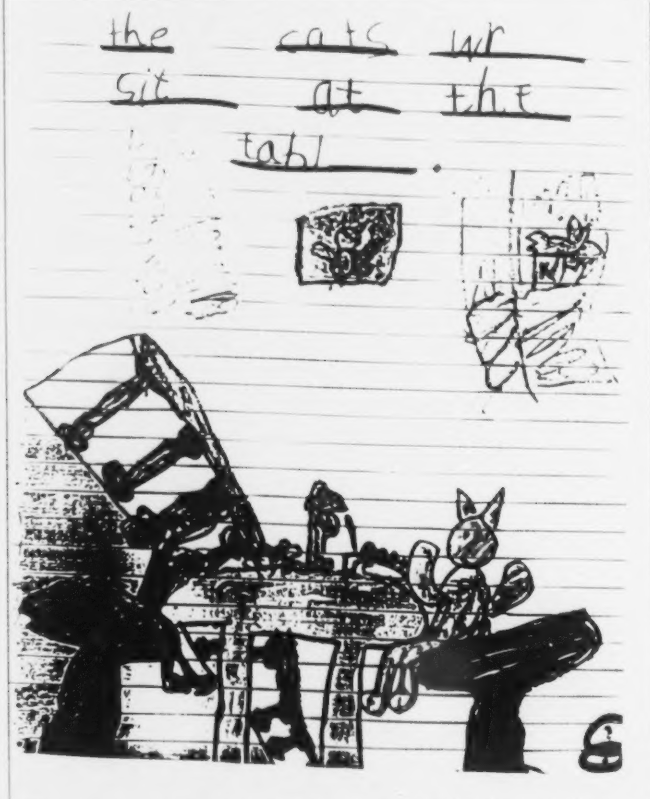

Figure 5. Amanda's Sample of Scaffolded Writing (Teacher-Assisted Stage)

may edit for meaning, replacing one word with another.

The following is an observation of Amanda several months later, after Ms. Martinez has encouraged her to use Scaffolded Writing by herself.

Amanda finished drawing her picture and said the first sentence of her message aloud, making a line for each word. She then put the highlighter down and immediately began to write the message on the lines. At this point, she consulted the alphabet chart a couple of times, and asked another child for help with the word "apartment." She did not ask the teacher for help. She repeated the process, planning each sentence, and then writing on the lines. Each new sentence was planned after she had reread the previous sentence.

After Amanda wrote the last sentence, she reread the entire message to herself and only then she asked Ms. Martinez to come and listen to her story. When reading back her writing, she continued to point to each line as she was saying the word. (See Figure 6.)

Eventually, the children discontinue the use of the lines altogether, being able to plan and monitor their writing process without external scaffolds. By this time, children are writing very long sentences and their stories consist of several sentences. Children in the final stage often say that the use of the lines "slows them down" so they stop using the scaffolds on their own. In Vygotskian terms, when children discontinue their use of an external scaffold, it suggests they have the idea or concept internalized and no longer need materialization coupled with private speech (Galperin, 1969, 1985, 1992; Vygotsky, 1978).

It has been our experience that the timing of this final stage varies from one child to another. Typically, all

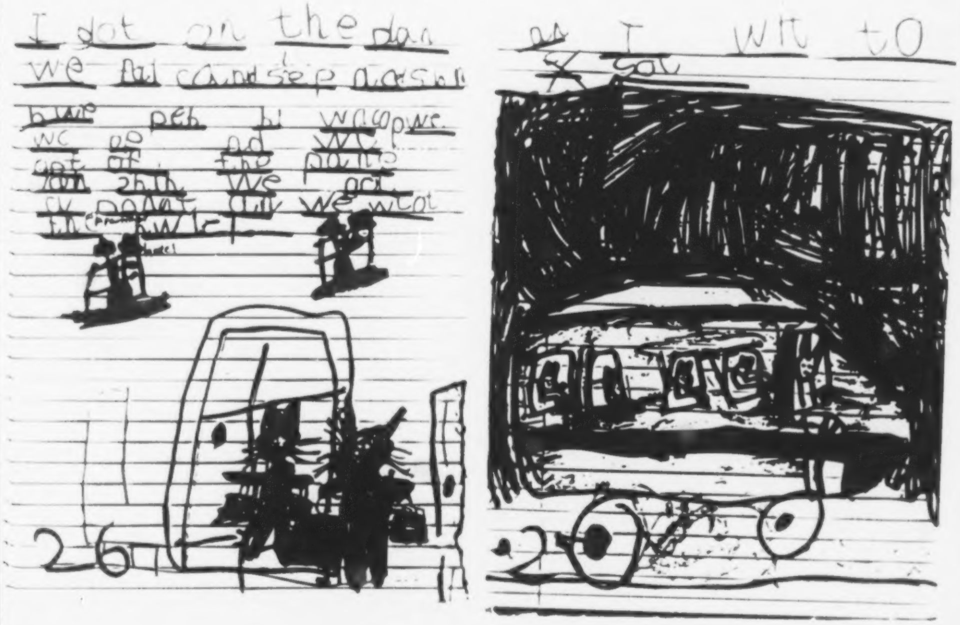

Figure 6. A Sample of Amanda's Independent Use of Scaffolded Writing

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kindergarten children, no matter how early they start using Scaffolded Writing, continue the use of lines for the whole year. Older children, however, tend to drop the use of lines much sooner, even if their initial unassisted level of writing is comparable to that of the kindergartners.

How Scaffolded Writing Supports Performance Within the ZPD—a Case Study

In a case study to investigate the impact of Scaffolded Writing on emergent writers, we compared samples of unassisted and Scaffolded Writing from a group of 34 kindergartners who used the technique during the school year. We hypothesized that the use of Scaffolded Writing would tend to support the next developmental level within the child's Zone of Proximal Development. If a child were scribbling, then Scaffolded Writing would support the child's use of letters and letter-like forms. If a child had begun to write letter-like forms, then the child would be able to produce phonetic representations of the first sound, and so on. We also hypothesized that children would increase the length of their stories because the line would act as a tool for memory. Thus, both the quality of the message and the use of more developmentally advanced writing forms were expected to increase simultaneously as a result of scaffolding.

Subjects

The participants were 34 five-year-olds who attended half-day kindergarten in a low-income, multi-ethnic, urban school. Over 90% of the children in this school qualified for receiving free or reduced lunch. The students at this school were considered to be an "at-risk" population by the district. The Scaffolded Writing technique was implemented in four classrooms (two morning sections and two afternoon sections) that were taught by two teachers.

The two teachers who participated in this study were trained in the use of the Scaffolded Writing technique during an in-service workshop. The teachers used the technique twice a week with small groups of four to six children. In addition to Scaffolded Writing opportunities, children participated in a literature rich environment that included considerable amounts of reading by the teachers, the use of big books and rhymes, and a great deal of writing modeled by the teacher using Scaffolded Writing. There was no formal reading instruction nor were phonics or letter drills a part of the kindergarten curriculum.

Procedure

Writing samples were collected from the normal journal writing activity that occurred three times a week. The sample collected in September that contained the most extensive writing effort was used as the baseline for unassisted performance. This sample was compared to two examples of Scaffolded Writing. One was taken in November after teachers had used Scaffolded Writing for approximately one month, and the other in May when the children were using Scaffolded Writing on their own.

Gentry's Scale of Writing (Gentry & Gillet, 1993) was used to demonstrate the children's progress in forming letters, representing sounds, and mov-

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ing toward conventional spelling. Gentry's scale was chosen because it had the clearest and the most detailed definitions of the characteristics of each level. Children were rated to be at a specific level if 75% or more of their writing was consistent with the level described. Writing samples were analyzed by three independent raters.

In addition, the writing samples were analyzed for the meaningful quality of the message, that is, the extent to which the message made sense (Sulzby, 1992). These characteristics were rated independently on a yes or no basis. Information from the children's rereadings was collected using teachers' anecdotal records.

Results

See Table 1 for a summary of the results. In September, before teachers started to use Scaffolded Writing, 20 out of the 34 children were at the level where they used scribbles and pictures to represent their stories. Some of them would not attempt to write on their own at all, preferring to dictate their stories to the teacher. Fourteen of the children began at the pre-communicative level. Many of these children wrote messages that were not related to the picture. Some of the messages contained lists of unrelated words while other messages contained sentences. Only

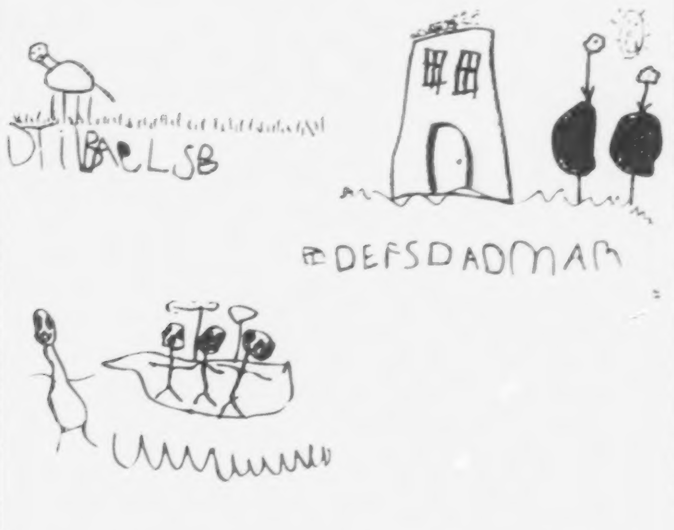

Figure 7: Typical Examples of Kindergarten Children's Unassisted Writing

Table 1 Summary of the Results of the Case Study Children's Writing With and Without Scaffolding from September through May

Level Date of the Sample	Scribbles, Marks, or Pictures Only	Pre-Communicative	Semi-Phonetic	Phonetic/ Transitional
September (Unassisted)	20	14	0	0
November (Teacher-Assisted Scaffolded Writing)	1	10	23	0
May (Independent use of Scaffolded Writing)	0	9	17	9

two children generated long and involved oral stories that they attempted to record. There were no attempts to use invented spelling. Letters used in the written messages did not correspond to the phonemes present in the oral stories. Children were unable to reread their messages consistently and were more likely to make up a completely new story rather than remember what they intended to write. Figure 7 shows typical examples of children's writing in September.

By November, when the second sample was collected, the children had been using Scaffolded Writing for a month with the teacher representing each word of the message with a highlighted line. At this time, all of the children except one were writing at a level higher than their initial level as shown in Table 1. As measured by Gentry's Scale, of the children who in September were at the level of scribbles, all but one were now at the pre-communicative level and nine were now writing at semi-phonetic level. The child who did not show any progress continued to use scribbles mixed with random letters.

The November sample showed that all of the children initially at the pre-communicative level, moved to the semi-phonetic level. Most of the children had begun to represent some sounds with letters. All of the children wrote beginning sounds consistently. Some also included ending consonants and medial vowel sounds in some of their words. All of the messages were now read immediately after the writing with the children pointing at the lines as they read. All the messages were meaningful. There were no lists of unrelated words and all of the messages were directly related to the pictures. Figure 8 shows examples of teacher-assisted use of Scaffolded Writing.

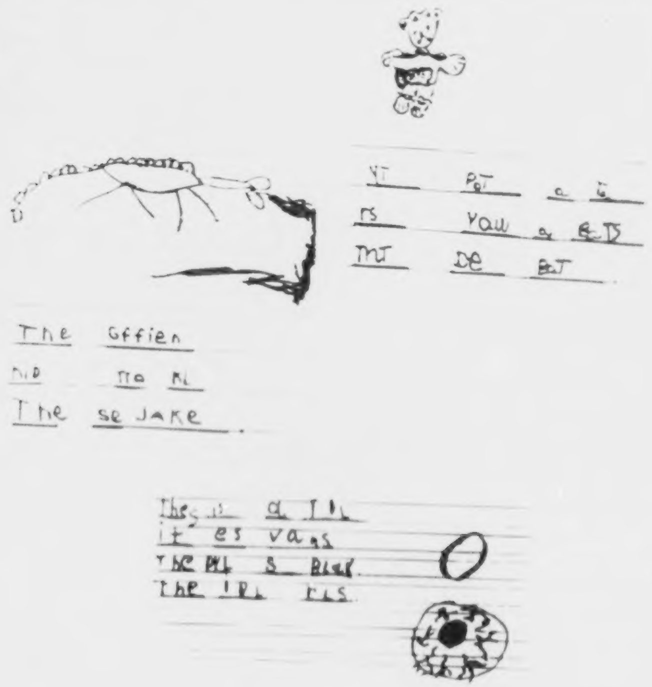

Figure 8: Examples of Children's Use of Scaffolded Writing--Teacher-Assisted Stage

In May, after using Scaffolded Writing for eight months, children began to draw highlighted lines when planning their own messages. By this time, the children were able to materialize the message on their own and use private speech without the teacher's help. The teacher no longer helped

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the children extensively with their writing, offering only occasional assistance with the sounding out of certain words.

Judging by the May samples, children had made even greater progress in the use of phonetic representation of words and invented spelling. None of the children used scribbling or random letters to represent words. All representations were phonetic in some way. Some children wrote several sentences that formed a story. All of the children could read back their story and would point to each line while reading the intended word, whether it was fully or only partially represented by letters. Simple sight words were conventionally spelled and all other words were written in invented spelling. The invented spelling of some children reflected their reliance on the sounds of the word (e.g., "uv" for "of" or "ol" for "all") as well as reliance on visual memory (e.g., "two" for "to"). These children's writing combined the characteristics of phonetic and transitional levels. None of the children reached the level of conventional spelling. By May, all of the children continued to write meaningful messages and the number of messages that contained more than one sentence increased. Teachers reported that the rereadings had become more accurate. Figure 9 illustrates typical examples of writing when children were using Scaffolded Writing independently.

Teachers reported they had not before had at-risk children in their classrooms who wrote so much and who were so advanced in phonemic representation. They reported that by May, they did not have to direct any writing—that children wrote during journal time, often electing to stay to write rather than moving on to other activities. There was tremendous interest in reading their messages to others as well as reading messages written by others. Many children demonstrated a stronger interest in reading than the teachers had expected.

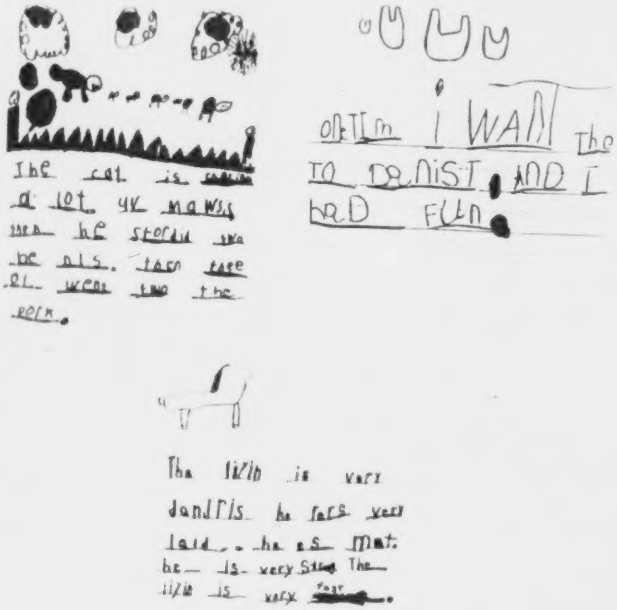

Figure 9: Examples of Children's Independent Use of Scaffolded Writing

Discussion

As we can see from the data, the use of materialization and private speech in the form of Scaffolded Writing did produce more advanced writing compared to the level of writing the children produced when unassisted. The progress was demonstrated in the use of more advanced appearing forms of writing, increased use of invented spelling, and increased length and quality of the messages. The difference between unassisted writing and Scaffolded Writing varied between individual children indicating the differences in their zones of proximal development.

Scaffolded Writing followed the predicted path of all scaffolding — it began with assistance by another person, was eventually appropriated or used by the children with little outside support, and later became unnecessary as internalization occurred. After the scaffolds were removed, the performance remained at a high level—there was little regression to earlier less-advanced appearing forms. The fact that children did not decrease their level of writing after the teachers' assistance was no longer present, suggests that materialization and private speech became the children's own "tools".

It is difficult to ascertain from the literature typical levels and rates of development for the average kindergarten child. However, in comparing these data to the levels of writing identified by Sulzby (1996), these children seem to be performing at higher levels than expected—particularly for an at-risk population. Nevertheless, the current study is a preliminary one, and the degree to which Scaffolded Writing assists children more than other methods of writing instruction needs to be investigated empirically with controlled studies.

In conclusion, we suggest that Scaffolded Writing provides educators with both a novel research tool to examine children's learning of literacy skills and an effective way to support early writing. As a research tool, Scaffolded Writing makes it possible to establish the higher level of a child's ZPD when the lower level is determined by the child's unassisted writing. It also provides a different context to study the relationship between different strands in the development of emergent writing. For example, in our study, it was observed that an increase in message length was not necessarily accompanied by a decrease in the developmental form of writing.

The Scaffolded Writing method also holds promise as a new instructional technique that may be used by classroom teachers. It allows teachers to provide appropriate individual support while at the same time to work with a small group of children. Scaffolded Writing facilitates the transition to independent writing. It supports the child's message production, thus preserving the critical link between meaning and writing. It helps the child to distinguish the "word" within the flow of that message and stabilizes the link between meaning, oral speech, and the written word. It adds to our repertoire of appropriate types of support in the area of emergent literacy—expanding the tactics to include materialization and private speech. In this way, we fulfill Vygotsky's ideal that, "The teacher must orient his work not on yesterday's development in the child but on tomorrow's. Only then will he be able to use instruction to bring out those processes of development that lie in the zone of proximal development" (Vygotsky, 1987, p. 211).

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Note: The names of the Russian authors have been romanized in a number of different ways. We have used the most common spellings. Listed in parentheses are common alternative spellings: Vygotsky (Vygotski, Vigotsky, Vygotskij); Elkonin (El'konin); Galperin (Gal'perin); and Leont'ev (Leontjev).

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Biographies

Elena Bodrova received her degrees from Moscow State University and the Russian Academy of Pedagogical Sciences. She worked in the Institute of Preschool Education and later in the Center for Educational Innovations in Moscow, Russia. After coming to the United States, Dr. Bodrova was a visiting professor at Metropolitan State College of Denver and is currently working for the Mid-Continent Regional Education Laboratory (McREL).

Deborah Leong received a B.A. and Ph.D. from Stanford University and an M.Ed. from Harvard University. She teaches at Metropolitan State College and is a co-author of a college textbook on assessment in early childhood education titled *Assessing and Guiding Young Children's Development and Learning*.

Drs. Bodrova and Leong have published extensively in the field of early childhood education. Some of their most recent collaborative efforts include: *Tools of the Mind: The Vygotskian Approach to Early Childhood Education* (1996) published by Merrill/Prentice Hall; "Scaffolding the Writing Process: The Vygotskian Approach" in *The Colorado Reading Council Journal* (1995); "Adult Influences on Play: Vygotskian Approach" an article in the edited book titled *Play and its Role in Development*, published by Garland Press; three videos by Davidson Film — *Vygotsky's Developmental Theory: An Introduction; Play: The Vygotskian Approach;* and *Scaffolding Self-Regulated Learning in the Primary Grades*.

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Common Roots and Threads: Developmentally Appropriate Practice, Whole Language, and Continuous Progress

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Abstract

This paper compares the historical roots and principles of three current bodies of literature, all of which advocate school and curricular reform. Originating from different fields, *developmentally appropriate practice* (early childhood), *whole language* (literacy education), and *continuous progress* (educational leadership) are presented and compared by authors representing each field. A discussion of common roots and threads among these fields concludes the paper.

As a century and a millennium both draw to a close, it is clear that many professional fields have undergone revolutions (Kuhn, 1970) and this includes the ways in which educators are contemplating learning, development, and schooling in general. Several different disciplines are offering new ways or revising old ways of viewing knowledge and the world in general. A curious common thread among discussions in various fields is a notion of wholeness and connectedness, or the inter-relatedness of features, phenomena, subjects, or ideas.

In conjunction with the changes emerging, different educational fields or professional societies put forth summations of their ideas or principles for the benefit of practitioners in their field. These summative principles represent a long genesis of ideas, research, and scholarly discussion that have germinated over many decades. For educators who have multi-disciplinary and interdisciplinary loyalties, it becomes apparent that the principles, practices, and issues expounded have similar properties and common threads, and often appear congruent. This paper explores the similarities and differences in the espoused principles from three related disciplines in education: developmentally appropriate practice, whole language, and continuous progress. Such an exploration demonstrates a high degree of consensus among the three fields with respect to best practices for

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teaching and learning and provides members in each field an opportunity to consider the language of consensus and to recognize that highly similar messages in the three related fields represent a reinforcement of each body of beliefs and writings.

The principles derive from different fields. The first of these involves the principles of *developmentally appropriate practice* from the early childhood educators and is framed by the National Association for the Education of Young Children (Bredekamp, 1987; Bredekamp & Copple, 1997). The second set of principles is extracted from numerous sources in the literacy education body of knowledge and is referred to as *whole language*. The third set of principles emanates from the educational leadership movement, which is looking at schools and their restructuring, and is referred to as principles of *continuous progress*.

All three authors have varying degrees of experience in all of these schools of thought. Yet, because we each had our roots more strongly in one as we followed parallel but different career ladders, we have chosen here to present separately the roots and tenets of our respective backgrounds (developmentally appropriate practice, [Vander Wilt], whole language, [Kasten], continuous progress, [Lolli]), and then subsequently to compare and contrast these three bodies of thought.

Proponents of the three schools of thought may vary and perhaps even disagree on aspects of the principles. We view such discussions as the healthy and scholarly dialogue that keeps any school of thought dynamic rather than dogmatic. We make the assumption here, since each of these schools of thought is based on a growing body of research and thinking, that as the processes continue to evolve, the resulting principles, too, will constantly be in revision. This article then, will likely date itself within a decade. Thus, we examine issues as they are now, with change as an imminent expectation. For each area we will describe the relevant principles, consider the key figures, and present the implications for education.

What is Developmentally Appropriate Practice?

Developmentally appropriate practice (DAP) has become a buzz word in educational circles, suggesting a variety of meanings and practices. In an effort to articulate clearly the meaning of DAP and its implications for educational practice, the National Association for the Education of Young Children (NAEYC) developed a comprehensive statement of developmentally appropriate practices (Bredekamp, 1987; Bredekamp & Copple, 1997). While DAP has typically been associated with the education of young children, the term has recently taken on a broader definition. For instance, the Association for Childhood Education International (ACEI) has a publication entitled *Developmentally Appropriate Middle Level Schools* (Manning, 1993), which examines the developmental concerns of early adolescence with implications for curricular and instructional decisions. In recent years, DAP has come to mean that educational practice must always account for the developmental levels of students, no matter their age.

As defined by the NAEYC, DAP has three dimensions: age appropriateness, individual appropriateness, and knowledge of children's social and cultural contexts. Age appropriateness suggests that "there are universal, predictable sequences of growth and change that occur in children" (Bredekamp, 1987, p. 2). Awareness of typical sequences of growth and change, then, provides a framework from which teachers prepare the learning environment and plan appropriate experiences" (Bredekamp, 1987, p. 2). Individual appropriateness addresses the uniqueness of the development of each child, as reflected in each child's pattern of growth, personality, learning style, and family background. Thus, while a teacher forms a framework for curriculum that is age appropriate, the additional awareness of individual children's interests and understandings provides further direction for curriculum and adult interactions with children. The third and latest addition to DAP is knowledge of children's social and cultural contexts to ensure that learning experiences are meaningful, relevant, and respectful for the participating children and their families" (Bredekamp & Copple, 1997, p. 9).

Who's Who in DAP Today

A number of contemporary educational leaders have provided support for NAEYC's position on DAP. Constance Kamii, a former student of Piaget, continues to apply Piagetian theory to teaching, particularly the teaching of mathematics (Brewer, 1992). David Elkind has written several books on the miseducation of young children. His writings have addressed the problem of too much academic pressure, suggesting "that it is much healthier for children to … develop in as stress-free an environment as possible" (Brewer, 1992, p. 20). Lillian Katz has focused on the teaching/learning process. She believes that teachers must be concerned about how children acquire attitudes, skills, and dispositions, in addition to knowledge (Katz, 1987). Other contemporary voices include those of David Weikart, Marian Hyson, Rosalind Charlesworth, and Majorie Kostelnik. These persons are representative of educators who are addressing educational issues from a perspective which complements the NAEYC's position.

DAP has evolved from a belief that children have within themselves a natural disposition toward learning into a comprehensive perspective which embraces a constructivist approach toward learning. Deeply embedded in DAP is the belief that children must actively construct their own knowledge through exploration and interaction with materials, peers, and adults.

DAP Educational Principles and Practices

Educational principles and practices that are supportive of DAP include many strategies which are currently encouraged by educational leaders and professional organizations. The guidelines developed by NAEYC (Bredekamp, 1987; Bredekamp & Copple, 1997) draw together the expertise and experiences of hundreds of early childhood professionals. These beliefs were compiled by a commission of 29 persons representing a national membership of NAEYC, chaired by Bernard Spodek. A summary of the central tenets of DAP, with a special focus on the primary grades, is presented below. A more complete description of DAP is available in the work of Bredekamp and Copple (1997).

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Age and Individual Appropriateness

As was noted earlier, the central tenet of DAP is that "best" educational practice for children includes three dimensions: age appropriateness, individual appropriateness, and honor of the child's social and cultural background. Therefore, adherence to DAP suggests that teachers must be aware of and account for the typical sequences of growth and change which "provide a framework from which teachers prepare the learning environment and plan appropriate experiences" (Bredekamp, 1987, p. 2), as well as be aware of and account for individual children's development, understandings, and interests.

Not only should common learning experiences that meet the needs of all or most of the children be provided, but experiences that meet the needs of only one or a few children must be provided as well. Not all children should be expected to achieve the same skills or understandings. In addition to the above, revised guidelines include: (a) the critical role of the teacher; (b) the concept that classrooms are learning communities; (c) the role of culture; (d) the significant role of families; (e) attention to children with special needs; (f) the importance of meaningful and relevant curriculum; (g) authentic assessment practices; and (h) the importance of an infrastructure to deliver quality programs (Bredekamp & Copple, 1997).

Wholeness of Children

Children are whole persons; physical, social, emotional, and cognitive development are integrated. While cognitive development is important, each area of development affects every other area of development. An understanding of the relationships that exist among all aspects of development strengthens the teacher's ability to foster the development of each child's whole person.

Active Involvement

Children must be active participants in their own learning. Only they can construct their understandings and meanings from their life experiences. Affirming this belief means that teachers must provide many opportunities for children to assume an active role in their own learning, recognizing that they cannot "pour" meaning and understanding into children's minds.

Interaction with Adults, Peers, and Materials

Learning occurs when children interact with both people and materials in their environments. Interactions between children and adults as well as other children facilitates children's mental manipulation and ownership of ideas. Furthermore, manipulation of real, concrete, and relevant materials also contributes to children's understandings. Children learn through both talking and touching.

Authentic Experiences

Children learn best from personally meaningful experiences that flow from the reality of their lives and are authentic. When school experiences reflect the reality of life beyond the school, learning is more purposeful and relevant for learners. Furthermore, all the experiences of the school day—and life—are potentially meaningful learning opportunities. Even times in the school day which might be perceived as "down time" (e.g., recess, lunch hour, and transitions) provide opportunities for personal growth.

Appropriate Learning Activities

Appropriate learning activities include projects, learning centers, and activities such as building, drawing, writing, discussing, and reading. Engagement of children in independent research, excursions, interviews, and the practice of social skills leads to individual involvement in learning. Activities involving exploration, discovery, and problem solving are recommended, especially when learning math and science concepts. Additionally, cooperative and individual as opposed to competitive activities are more appropriate.

Integrated Curriculum

The curriculum should enable children to make connections among and between ideas and knowledge. Distinctions among the various subject areas are arbitrary and not very meaningful for children. Integrated thematic units form the foundation for a developmentally appropriate curriculum.

Intrinsic Motivation

Fostering intrinsic motivation has the potential to support the development of responsible and autonomous learners, that is, learners who develop a passion and love for a lifetime of learning. Intrinsic motivation is enhanced when children become engaged in and committed to a curriculum that is personally meaningful. Additionally, empowering learners to make meaningful and appropriate choices also contributes to intrinsic motivation for an ownership of responsibility.

Authentic Assessment

Evaluation of children's progress should flow directly from the tasks and experiences in which learners have engaged. Assessment strategies include regular observation, which is recorded and regularly reported to parents in the form of narrative comments. Furthermore, meaningful evaluation should lead to improved instruction. In other words, evaluation and instruction must be integrally related so that each informs the other.

Inappropriateness of Grade Retention

Grade retention is inappropriate. The assumption of DAP is that each child grows and develops at his or her own pace. Since children do not grow at the same pace, the classroom must meet and accommodate the unique learning needs of each child. In many instances, it may serve a child best to be part of a family grouping in which children's ages span more than the traditional one year. Also, meeting the special needs of most children within the regular classroom is realistic, given the assumption that children are not expected to achieve at the same pace.

Literacy Development

Through a variety of interesting and meaningful experiences, children construct and "expand their abilities to communicate orally and through reading and writing .... Subskills such as learning letters, phonics, and word recognition are taught as needed to individual children and small groups through enjoyable activities" (Bredekamp, 1987, p. 70).

Role of Culture and Families

The most recent revision of DAP expands awareness of the whole child by calling for an understanding of children's family and culture. This understanding by teachers and caregivers will assist in making curriculum meaningful and relevant and will honor an individual's diversity (Bredekamp & Copple, 1997).

Summary

To summarize, DAP embraces a comprehensive set of guidelines, the goal of which is to empower learners to construct their own knowledge, based on real and meaningful life experiences. Furthermore, these practices are not meant to minimize the importance of the teacher; teachers play a significant role in designing and providing experiences that support all children at their growing edge. The learning community, which is developmentally appropriate, is one in which learners are actively involved in "meaning-making" that is reflective of who they are at a given point in time and is supportive of their growth and development in ways that are personally engaging and relevant to their life experiences, thereby honoring the family and culture

What is Whole Language?

Explaining whole language may be as difficult as explaining the principles of a major world religion in the space of a matchbook cover. Part of the difficulty stems from the fact that there is a difference between what whole language is (a body of knowledge) and what whole language does (principles for practice). Whole language emanates from a set of beliefs and assumptions. These beliefs and assumptions represent the best in what the field of language arts/reading has to offer in terms of the emerging body of knowledge regarding language learning and becoming literate. Keeping in mind the extreme difficulty and impossibility of covering all bases, this section will present some of the roots of whole language, followed by some of the principles.

Research Launching Whole Language

The body of knowledge now called whole language was launched from a variety of disciplines that all involved learning, language, and literacy. Each contributed theory and research that illuminated the process of educating people in the combined language arts. These strands derive from: (a) psychology and its constructivist-based views of learning; (b) research on oral language development and linguistics; (c) miscue analysis, which involves the study of the process by which people read connected discourse; (d) the research on writing as a developmental process (including spelling as a component of the process); (e) the study of reader response to different kinds of text in the field of English; and (f) the incorporation of qualitative, descriptive research paradigms from the field of anthropology. Obviously these roots are substantial and complex. Therefore, only a brief explanation will be included here, and readers are urged to read further.

Constructivist Based Learning

Cognition implies entities of knowledge, consciousness, intelligence, thinking, imagining, creating, inferring, problem solving, conceptualizing, classifying, relating, symbolizing, and perhaps fantasizing and dreaming (Flavell, 1977). Cognitivism and constructivism have their roots in the work of Piaget, which describes cognition as a system of interacting processes "which generate, code, transform, and otherwise manipulate information of various sorts" (Flavell, 1977, p. 12). This view of learning is very complex and multilayered.

Vygotsky, a Russian psychologist, contributed to knowledge of cognition when he explored the relationship between thought and language and theorized about the more subtle workings of the mind. He urged that one must consider the relationship between learning and development, and not view learning as a purely external process (Vygotsky, 1978). He went on to suggest that good teaching should be slightly in advance of development, so that learners are constantly stretched. Vygotsky describes his notion of "the zone of proximal development" as the place between what a learner can do alone in problem solving and what can be accomplished with the powerful element of collaboration between peers and between adults and children. Vygotsky's contributions to the foundation of whole language are vital and deserve further study on the part of any interested reader.

Roots of Whole Language Specific to Literacy Learning

Three areas of research that are highly essential to the development of whole language are each mentioned here briefly because they are discipline-specific. First of all, a number of respected scholars fostered thinking about the interrelationships of reading, writing, listening, and speaking in various ways, and examining language, taking into consideration its external relation to its social context, including the form, content, and expression. Language learning was viewed as a system of constructions of meanings in a semiotic, or symbol system (Halliday, 1980) and aptly coined the expression for language development as "Learning How to Mean," which is also the title of a landmark book on the subject (Halliday, 1977; 1980). Young children's knowledge (schema) was also examined from the perspective of what they know instead of what they do not know, referring to them as tacit analyzers of language (Read, 1971). Their early knowledge of phonetic subtleties, including their use and logical and systematic errors, taught us that the process of language learning cannot be simply memorization, as that would not account for children's ability to spell unfamiliar words.

A second area of research emerged in the early 1960's when Ken Goodman began to look at reading from the premise that it must be a "language process." By observing readers engaged in the process, analyzing variations in the reading, and examining the nature of the errors or miscues in the context of the comprehending of the text, Goodman identified a psycholinguistic basis for reading (Goodman, 1970; 1973). Simultaneously, Frank Smith, a Canadian researcher, was examining reading in a similar fashion and reached the same conclusions, also calling reading a psycholinguistic process (Smith, 1973; 1978). Extensive subsequent studies incorporated miscue analysis into every aspect of reading instruction, applying its principles to practical considerations (e.g., Allen, 1976; Goodman, 1979; Goodman, Watson, & Burke, 1987; etc.). All this research proposes a descriptive view of literacy learning in authentic situations.

A third area of significant research was in writing development. Researchers began to look at writing as both a cognitive process, and as a developmental one. Researchers in secondary and higher education first looked at the cognitive nature of writing, noting, for example, that writing has inherent subprocesses that involve extensive, intensive thinking (Emig, 1977; Flower, 1981; Flower & Hayes, 1980; Odell, 1980; Perl, 1980). Meanwhile, researchers in elementary education were looking at the emergent, developmental writing of young children, noting the parallels in the process to oral language learning, and seeing it as an active process of constructing meaning (Calkins, 1983; Chomsky, 1971; Clay, 1975; Graves, 1983). With the focus on the relationship between reading and writing, the term "emergent literacy" resulted with researchers who looked at children's developing concepts about print and written language (e.g., Ferreiro & Teberosky, 1982; Goodman & Altwerger, 1981; Harste, Woodward, & Burke, 1984; Holdaway, 1979; Teale, 1986; etc.). This resulted in an increasingly developmental view of children's literacy learning with the child at the center of the process.

Reader Transactions with Text

Another area of scholarly pursuit that was occurring simultaneously with, and in some cases prior to, much of the aforementioned work came from the field of literature. Rosenblatt, whose work began in the 1930's and was later reissued (Rosenblatt, 1978), dispelled earlier notions held by many theorists that meaning was somehow inside a story or piece of text, and that readers needed to interpret it correctly and accurately. Rosenblatt asserted that reading events have three constituent parts that all contribute to the experience of literature, including readers with all of their prior knowledge (schema), physical texts written down on paper, and intended messages of the authors. These three constituents, Rosenblatt argued, result not in an interaction, but rather a transaction. Each transaction, she argued, resulted in some change on the part of the reader. Rosenblatt's work gloved nicely with ongoing research in the field of reading which began to look at comprehending, the process, as opposed to comprehension, the product of reading.

Research Paradigms

One of the most significant contributions to the whole language body of knowledge comes from the field of anthropology where areas can be studied in-depth, and within the context of the larger picture of human living. Heath (1983) taught the field to view the big picture, considering how language learning relates to culture. Much educational research in the past was of short duration and investigated a particular behavior, strategy, or technique outside the realm of the context of the social structure in which it would ordinarily take place. Heath's *Ways with Words* provided us with new insight for considering a variety of research methodologies, including naturalistic inquiry (Guba, 1978).

Other Whole Language Influences

In addition to the above-mentioned fields and lines of inquiry that constitute some roots of whole language, there is a parade of people—thinkers about education—to whom whole language is also indebted. John Dewey is one who is often cited and quoted (e.g., Dewey, 1929) as the principles of his progressive movement are echoed in the principles and in the practices that follow. Indeed, many others had sentiments that focused on the individual or on the whole person and the power of experience in learning that form the long genesis of whole language thought.

Principles of Whole Language

In different sources, one will see different principles of whole language presented, but all have the same common thread, spirit, and intent. Because of the immense size of the bodies that contribute to the roots of whole language, it is difficult to state those principles concisely. Part of this difficulty is in the fact that some of the principles apply to learning in general, and some refer more specifically to language learning. Consequently, the principles of whole language in reality apply to all areas of curriculum, a fact which is indicative of the wholeness and interrelatedness that describe all three topics in this paper. In this section we attempt to synthesize the principles from several different sources.

Whole Language Principles Applying to all Learning and Curriculum

As stated earlier, although the whole language body of literature emerged from language-related sources, whole language theorists have not confined their ideas to reading, writing, listening, and speaking. Part of the thread of wholeness and inter-connectedness that characterizes whole language makes it paradoxical to speak of language learning without the rest of the picture.

The learner. Basic to whole language principles is that the learner is active and involved in the process. This is necessary because language learning is a highly personal and social process (Cazden, 1992; Crafton, 1991; K. Goodman, 1986; Y. Goodman, 1989; Poplin, 1988). In other words, language and literacy are developed when learners use them in meaningful, functional ways, interacting with teachers, learners, family, and the wider community.

The teacher. A basic whole language principle is that teachers are professionals who continue to learn and grow and who are responsible for classroom decisions based on their knowledge, their observations of children, and their reflection of daily classroom events (Cazden, 1992; K. Goodman, 1986; Y. Goodman, 1989). They are participating members of the classroom community and models for the processes they teach (Y. Goodman, 1989; Raines, 1995).

The Curriculum and the Classroom

Classrooms are expected to be meccas of rich learning environments with access to quality children's literature, informational books and reference sources, and with ample opportunities to use rich resources to inquire about engaging questions relevant to children's lives and their futures (Cazden, 1992; K. Goodman, 1986; Raines & Canady, 1990; Weaver, 1990). A further principle is that these environments lend themselves to authentic, meaningful, integrated curriculum in which language processes are means rather than ends and the context includes opportunities for learner choice (Cazden, 1992; Cordiero, 1992; Crafton, 1991; K. Goodman, 1986; Y. Goodman, 1989; Poplin, 1998). In conjunction with this connected curriculum which simulates real life situations, events, and circumstances, are the expectations that this type of learning will be motivating for all learners and that all children will learn and eventually be successful (Raines & Canady, 1990; Weaver, 1990).

Learning Theory

Some whole language principles are simply restatements of sound learning principles. For example, these may include acceptance of children where they are and acceptance of approximations as signs of growth along a learning continuum (Raines, 1995). In addition, they may include the notions that learning proceeds from whole to part or from the big picture to the specific (Crafton, 1991; K. Goodman, 1986; Weaver, 1990); that modeling and demonstrations are at the heart of learning and teaching (Crafton, 1991); and that the learning process is spiraling but self regulating, with learners continuing to search for new meanings (Poplin, 1998).

Principles of Whole Language Specific to Language Learning

Although it is difficult to separate principles dealing with learning from those more specific to language learning (and it may be paradoxical to do so), nonetheless, there are themes that emerge in the literature.

For one, attitude and expectation are critical. A principle of whole language might be stated as: children must be accepted as readers and writers, and their attempts, their risk-taking, and the resulting approximations of language children produce must be valued (Crafton, 1991; Raines & Canady, 1990; Weaver, 1990).

Another principle involves the basic notion that reading, writing, and oral language are all related processes (Goodman, Goodman, & Hood, 1989), and that understanding these processes develops from whole to part rather than in small, unrelated fragments (Crafton, 1991; K. Goodman, 1986; Y. Goodman, 1989). Such an idea is, again, likely a result of the principle that language learning (like other learning) is socially constructed and personal (Crafton, 1991; Goodman, 1986; Weaver, 1990) and that developing language is empowering to learners as they continue to "learn how to mean" in language (Goodman, 1986, p. 26).

As in the principles presented earlier involving curriculum, whole language blossoms in the context of a rich learning environment (Cazden, 1992; Raines & Canady, 1990) that is well stocked with quality books and other resources and that offers learners opportunities to choose how to use these materials in meaningful, functional contexts (Cazden, 1992; Cordeiro, 1992; K. Goodman, 1986; Y. Goodman, 1989; Weaver, 1990).

As must be evident by now to the reader, these principles are complex and multi-layered because of the vastness of the body of literature from which they have emerged over time.

Continuous Progress: An Old Idea With a New Twist

Continuous progress is easily defined as continuous movement through the curriculum. However, the question then arises, "Whose movement through the curriculum—the group's or the individual's?" Therein lies the misconception about this field of study. Continuous progress is intended by its followers to provide for the *individual's* continuous movement through the curriculum. Only when the graded structure of schooling was implemented in 1847 did individualized instruction become the less preferred method (Goodlad & Anderson, 1987). Continuous progress, then, came to mean the class would continually and steadily move through textbooks and materials—ready or not.

Continuous Progress Emerges

Continuous progress as explored in the 1960s tended to rely heavily on matching instruction with cognitive development. Some situations that were called continuous progress were, in effect, what we now refer to as "mastery learning" programs. Students were pretested prior to and post tested following instruction. In some schools this instruction was individualized, and other schools used group instruction methods to facilitate the mastery learning, according to Hillson and Bongo (1971):

> Continuous progress included the following characteristics:
>
> - children's achievements thus far are viewed as baseline data for a starting point
> - no ceilings are placed on learning
> - activities and operation eliminate pupil retention and the need for promotion
> - readiness is taken into consideration so success is imminent and habitual
> - patterns of failure are avoided
> - continuous progress is enhanced by teacher collaboration
> - flexibility is achieved through differentiated student-teacher activities. (p. 9)

Many of the early twentieth century continuous progress models utilized a checklist style diagnosis and the Joplin plan of grouping for instruction, which was a means of grouping children in what was considered to be a more manageable way (Hillson & Bongo, 1971; Murray & Wilhour, 1971; Smith, 1968). Teachers taught one level in reading and math and children needing that particular level came to the teacher no matter their age or physical size. Schools scheduled large blocks of time for reading and math instruction, whereby all classes had the same time for both subjects so movement of children was easily facilitated. For example, a six-year old needing a Level 10 (fourth grade) basal went to the Level 10 teacher during the block of time set aside for reading instruction. Joplin planning (Slavin, 1988) was another means of ability grouping for children. Concentration on the adopted texts used in the Joplin plan, with a checklist/mastery approach, did not facilitate the type of individualized movement that continuous progress was meant to provide. Consequently, the results of such programs did not provide the "reform" for which everyone had searched.

Continuous Progress Today

Continuous progress for today's student now carries the impetus of current research on effective practice, teaching, and learning. Rather than the textbook or other adopted materials, the individual child becomes the focus of curriculum and instruction (Rollins, 1968). The age-old assumption that children of the same age learn the same thing at the same time in the same way has been put to rest with continuous progress advocates (Katz, Evangelou, & Hartman, 1991). The notion of rigid, graded classrooms, and promotion at the end of each school year is no longer applicable. The schooling structure becomes flexible and tied to children's needs, not artificial calendars.

Common Roots and Threads

Following is a description of the general concepts and principles of continuous progress as outlined by Anderson and Pavan (1992).

Individual Differences

Perhaps the single most important principle of the continuous progress movement is that individual differences among the population are accepted and respected. Diversity in the classroom is embraced. This principle is drawn from other work on learning styles, child-centered teaching, and developmentally appropriate practice. Children are accepted for who they are and where they are and taken as far as they can go individually by a teacher who uses a variety of instructional approaches, including hands-on learning, technology, and mini-skills lessons.

Learning is the Work of the Child

Learning, which is the work of the child, is intended to be not only challenging, but also pleasurable and rewarding. Continuous progress allows children to be aware of their own learning and progress rather than being isolated from the evaluation process. It allows the children to enjoy the learning based on their interest, needs, and abilities. They are engaged with meaningful learning on their developmental levels, which guarantees success and continued intrinsic motivation. Appropriate instructional challenges establish a comfort level that fosters risk taking.

Recognizing the Whole Child

The five areas of growth and development—social, emotional, cognitive, physical, and aesthetic—are nurtured and continuously assessed as the whole child is recognized. Teachers in continuous progress classrooms consider the whole child in making instructional decisions, providing children with a wide range of experiences and activities to nurture developmental needs. Interaction and self-expressions are viewed as vital elements of a continuous progress classroom.

Interaction with Others

Children interact with other children and adults of varying personalities, backgrounds, abilities, interests, and age levels. The children are exposed to the outside world through interactions with classroom visitors as well as through appropriate field trips and neighborhood visits. The knowledge they develop and the experience they gain from these opportunities for interaction are invaluable (Piaget, 1947; Vygotsky, 1978). Many classroom projects are best completed as a classroom unit, while other projects are best completed with community involvement. The continuous progress classroom provides a flexible, varying style of grouping for experiences.

Flexible Arrangements for Progressing

Students are expected to progress at their own pace and in appropriately varied ways. Instruction, learning opportunities, and movement within the curriculum are individualized to correspond with individual needs, interests, and abilities. Children are moved through the curriculum continuum as they demonstrate they are ready to move (Athey, 1970). For example, if a child, in the five areas of growth and development mentioned above, signals that he or she would be better served in an older age level classroom, the movement can occur at any time during the school year. True continuous progress is movement fluidly through the grades, multiage classrooms, or school levels. This does not imply backward movement of children, nor the bouncing of a child up and down and then back to the younger age group.

Expectations for Learning

The expectations for learning are grounded in developmental learning theory; benchmarks indicate what students are expected to learn over time. While this does not imply that all children reach the benchmarks at the same time and in the same way, it does imply that standards exist which are based upon theories of child development. These standards serve as goals for the teacher, parent, and child. The standards are not excuses for retention or failure. They serve merely as guiding indicators of curriculum goals.

Curricular areas are integrated and center around learner inquiry. Methods of inquiry and the skills of learning to learn—inquiry, evaluation, interpretation, and application—are taught and applied in relevant and purposeful activities. Children learn about broad concepts through individual research and inquiry. The teacher provides opportunities to learn, the reference and study skills needed to pursue the inquiry, and the children provide relevant information to answer the questions generated.

Assessment is Holistic, Continuous, and Comprehensive

The assessment in a continuous progress classroom must be holistic in order to provide information on the whole child. Teachers use observations, anecdotal records, audio tapes, video tapes, portfolios, student assessments, and many other forms of authentic assessments to analyze progress and to determine the next step for the child. By understanding the five areas of growth and development, teachers can more readily determine student needs. Documenting children's growth over a period of time and at frequent, often daily, intervals is vital to achievement in continuous progress settings.

Teachers are Empowered

Teachers are empowered to create learning experiences and to use instructional strategies at their own discretion as they orchestrate children's progress based on perceived individual needs. The teacher chooses appropriate materials for the individual child and directs his or her learning opportunities. Such greater creativity and flexibility are hallmarks of a continuous progress classroom.

Summary

In this section, we have described the relevant concepts, principles, and philosophical bases of developmentally appropriate practice, whole language, and continuous progress. Table 1 summarizes certain aspects of each of these three related schools of thought that have developed in parallel ways. Their striking similarities are presented in the following section.

Common Roots and Threads

Developmentally appropriate practice, whole language philosophy, and continuous progress share common history and threads that now need to be identified and explored. In comparing and contrasting the principles of each of these areas, differences are not nearly as apparent as similarities. The differences are evident in their origins and intent, not in their underlying principles.

To recap, *whole language* is a philosophy for learning language with definite implications for practice. The whole language movement originated in the literacy and language field. Implications for the classroom include authentic reading and writing experiences for diverse learners. *Developmentally appropriate practices*, with beginnings in early childhood education, are child-centered methodologies used in a classroom. Hands-on experiences enable the teacher and children to experience concrete learning in an enjoyable atmosphere. *Continuous progress*, from educational leadership, is a view of how children move through the schooling structure in a coherent fashion with forward progress. Continuous progress is used to create diverse learning communities, free of rigid grade or age level structures.

The guiding questions include: Can a context based on whole language philosophy exist without both developmentally appropriate practices and continuous progress? Can developmentally appropriate practices be used without a

Table 1 Summary of Characteristics of Three Related Schools of Thought

	D.A.P.	**Whole Language**	**Continuous Progress**
Progress Origin	Early Childhood	Reading & literacy	Educational Leadership
Question	How do we structure an early childhood environment for optimum, positive development?	What are the optimum circumstances and environments to create lifelong readers, writers, and thinkers?	What are the optimum school structures that allow children to progress as needed through curriculum?
Intent	Explicate methods practice	Articulate philos. of how kids learn, learn language, become literate.	Suggest/ direct appropriate movement through schooling structures and institutions.
Consequence or Implications	Setting up child centered classrooms with hands-on experiences.	Creating authentic reading/writing programs that provide for diverse learners growing into literacy.	Create learning communities that suit diverse learners and are devoid of rigid grade/age level structures.

sense of whole language philosophy and continuous progress? Can continuous progress be achieved without a whole language philosophy and developmentally appropriate practices? The answers to the questions are found in the threads that follow, always connecting, not separating the three schools of thought.

Common Ancestors Claimed by Each Tradition

When we explored the roots of DAP, whole language, and continuous progress individually, it soon became apparent that each of these traditions claims many of the same ancestors as its own.

For example, all three traditions overtly claim both John Dewey and Jean Piaget as their grandparents. While each tradition may ground its work more heavily on some ancestors than others, that is primarily because certain ancestors' work is more closely aligned with the goals and practices of each, but these scholars are not rejected by the others.

For example, the work of Pestalozzi (1746-1827), Friedrich Froebel (1782-1852), and Maria Montessori were focused on the young child. Consequently, their names appear frequently among DAP advocates. But their work can also appear among those in whole language and continuous progress because many of their principles apply elsewhere as well. In other words, whole language and continuous progress also concern themselves with young children's issues—it is just that their advocacy extends beyond those issues.

A few years ago, the work and influence of Vygotsky, the Russian psychologist who taught us much about social interaction and learning, was appearing more frequently in discussions about whole language. However, more recently, writers in DAP and continuous progress have also realized the relationship of his work to their own principles and practices.

Our common roots do not end with historical figures as new theorists and researchers from a variety of disciplines contribute to our body of knowledge about children and learning in schools; individuals from each tradition may discover the value of new work in the field as it develops. As we noted at the beginning, all three of these traditions are dynamic, change constantly with the times, and will continue to do so.

Common Threads in Three Traditions

In this section, the overlapping principles will be summarized in terms of one that speaks to *attitude*, those that express *learning theory*, and those that elucidate *curricular principles*.

Principle of Attitude

Thread 1, which expresses a commonalty among these three systems, is the principle of attitude.

Thread 1: **The process of education honors the integrity of the family, including the family's language and cultural diversity.**

The three fields (early childhood, literacy, educational leadership) that spawned DAP, whole language and continuous progress make references to honoring the language and culture of learners and their families and communities (Heath, 1983). This notion supports the idea of beginning instruction or activities with learners where they are. DAP expresses this by recognizing that children are unique, by allowing them to grow and develop at their own pace, as well as by honoring the cultural context from which children come (Bredekamp, 1987; Bredekamp & Copple, 1997). Whole language writers express this similarly, applying the notion specifically to learning to read and write, while having an attitude that both understands and honors individuals, their culture, and their learning pace (K. Goodman, 1986; Y. Goodman, 1989; Raines, 1995; Raines & Canady, 1990). Continuous progress expresses the sentiment similarly by espousing practices that recognize that individual needs, interests, and abilities are paramount in the process of meeting the needs of learners (Anderson & Pavan, 1993).

Principles of Learning Theory

The following three ideas form the basis for threads related to learning theory.

***Thread 2*: Learning occurs as children actively construct their own knowledge.**

Learning is a process wherein learners, as active participants, internally organize and reorganize new information by constructing mental structures or schemata. The expansion or reformation of these mental structures occurs through an interaction between previous learning and new experiences. DeVries and Kohlberg (1987) refer to this as a dialectic process in which children become active participants in the formation of the mind, not just "furnishing" it (p. 17). As interactions between existing mental schemata and new experiences occur, the mind is being developed. This process of learning, otherwise known as constructivism, is a theoretical perspective that contrasts first of all with the maturationist perspective which suggests that learning is an unfolding process generated from within the individual. Learning does not occur "just naturally," but neither can learning be "poured in." A constructivist perspective requires a learning environment which affirms the active role of learners in their own learning, recognizing the importance of factors which are both internal and external to the learner (Anderson & Pavan, 1993; Cazden, 1992; K. Goodman, 1986; Y. Goodman, 1989; Weaver, 1990).

***Thread 3*: Learning occurs within a social and interactive context.**

Children's interaction with both adults and peers is a key means by which children construct their own knowledge. Within their interactions, children engage in mental manipulation of new information in combination with existing schemata. This active engagement in the development of new concepts and meanings lies at the heart of the process of forming new and expanded mental schemata.

Curriculum recommendations for DAP, whole language, and continuous progress all reflect the importance of children's active interaction with adults and other children. Speaking for a DAP philosophy, Bredekamp (1987) and Bredekamp and Copple (1997) repeatedly point toward the necessity for children to communicate with others, strengthening their abilities "to communicate, express themselves, and reason" (1987, p. 64). A foundational instructional strategy involves providing opportunities for children to engage in conversation and discussion with adults and other children by asking questions, making comments, and stating opinions and ideas.

The premise on which a whole language philosophy rests is that learning occurs in a social context in which the learner makes meaning. Since the symbols of language and literacy are socially constructed phenomena, it is only within a social environment that meaning can develop (Cazden, 1992; Crafton, 1991; K. Goodman, 1986; Y. Goodman, 1989; Weaver, 1990). The learning of language in all its forms depends on communication between the learner and others, both adults and children. It then becomes evident that the learner must be immersed in a learning context which is purposeful, meaningful, and relevant. Finally, in acknowledging the significance of the whole child, continuous progress supports the importance of the social sphere in which the child is nurtured (Anderson & Pavan, 1993).

***Thread 4*: Learning experiences need to be appropriate to learners from the standpoint of development, culture, and social age, and they must honor the learner's age and pace.**

This thread resounds the sentiments of Thread 1 that speak to the need to honor learners and their families. The difference in this case is that the learning experiences themselves must reflect these ideas, which means that teachers must have a thorough knowledge of those they teach and take that knowledge into account in planning educational experiences. In other words, curriculum should be tailored to the social, cultural, and developmental needs of the learners (Anderson & Pavan, 1993; Bredekamp, 1987; Bredekamp & Copple, 1997; Y. Goodman, 1989; Raines & Canady, 1990). All three fields advocate for such an idea.

Principles of Curriculum

Thread 5 begins the curricular principles found in developmentally appropriate practice, continuous progress, and whole language. Each of the three concepts describes learning as the "work" of the child. In order for this learning to be meaningful, it must be challenging, pleasurable, and rewarding. The experiences for children provide a real life focus that is authentic and meaningful. In other words, children must see a relationship between actual life experiences and the activity of the classroom.

***Thread 5*: Learning is relevant and authentic.**

It is well documented that literate behavior is learned through real, functional use. This holds true for other learning in classrooms. Learning must have a functional purpose; otherwise, children fail to see the need to perform the task.

When children engage in meaningful learning experiences, they begin to take responsibility for their own learning. If the learning is truly the "work" of the child, the learning is extended beyond the classroom walls by the children themselves. As children make connections between school work and their own interests, independent, at-home learning becomes important to children. Responsibility for learning is achieved as children continue researching and studying without teacher direction (Bredekamp, 1987; Bredekamp & Copple, 1997; Crafton, 1991; K. Goodman, 1986; Pavan, 1972; Weaver, 1990), and must be challenging, pleasurable, and rewarding (Pavan, 1972). Such experiences for children provide them with a real-life focus that is authentic and meaningful. In other words, children must see a relationship between actual life experiences and the activity of the classroom.

***Thread 6*: Learners are intrinsically motivated because they experience rewarding, challenging, pleasurable learning experiences.**

This thread is the logical consequence of Thread 5 when authentic experiences are in place. Learners arrive at a learning task filled with intrinsic motivation. In teaching, the continuation of intrinsic motivation and drive are facilitated through challenging, authentic, and rewarding experiences. Learners bring their experiences and interests to the learning task and, thus, begin to take ownership for their learning (Anderson & Pavan, 1993; Bredekamp, 1987; Bredekamp & Copple, 1997; Cordeiro, 1992; K. Goodman, 1986; Y. Goodman, 1989; Weaver, 1990).

***Thread 7*: Curriculum is integrated, not separated.**

Curriculum is integrated, not separated within DAP, whole language, and continuous progress environments. While children have goals or benchmarks that educators have identified, the curriculum promotes integration of meaning across all subject areas. In such settings, curriculum promises a holistic view of the learning process as opposed to the acquisition of separate facts in subject areas. Movement of the children through curriculum is achieved through concept units, thematic units, topic studies, and in-

Table 2: Whole Language, Continuous Progress, and Developmentally Appropriate Practice: Common Threads

Principle of Attitude

Thread 1: The process of education honors the integrity of the family including the family's language and cultural diversity.

Principles of Learning Theory

Thread 2: Learning occurs as children actively construct their own knowledge.

Thread 3: Learning occurs within a social and interactive context.

Thread 4: Learning experiences need to be appropriate to learners from the standpoint of development, culture, and social age, and they must honor the learner's age and pace.

Principles of Curriculum

Thread 5: Learning is relevant and authentic.

Thread 6: Learners are intrinsically motivated because they experience rewarding, challenging, pleasurable learning experiences.

Thread 7: Curriculum is integrated, not separated.

Thread 8: Evaluation and assessment are holistic, continuous, comprehensive, and closely aligned with the teaching.

quiry—not progression through the adopted textbooks (Anderson & Pavan, 1993; Bredekamp, 1987; Bredekamp, & Copple, 1997; Cordeiro, 1992; Crafton, 1991; K. Goodman, 1986; Y. Goodman, 1989; Weaver, 1990).

***Thread* 8: Evaluation and assessment are holistic, continuous, comprehensive, closely aligned with the teaching, and result in instructional decisions regarding the learner.**

The final curriculum thread advocates for authentic evaluation and assessment. Assessment should be related to the curriculum and teaching, flowing directly from tasks and experiences. Separation of teaching and assessment is not valued or promoted. Assessment is built into the teaching process as well as the learning process through use of self-evaluation, teacher observation, and portfolio development.

Assessment should be continuous and comprehensive, providing invaluable feedback for teacher planning. Comprehensive assessment goes beyond traditional grading and is accomplished by concentrating on five areas of growth and development which include social, emotional, aesthetic, physical, and cognitive areas. As assessments are conducted, teachers and students utilize the information to determine what comes next for the class, the small group and/or the individual. As opposed to gathering unused and unwanted information and numbers, assessment is a practical tool for teachers (Anderson & Pavan, 1993; Bredekamp, 1987; Bredekamp & Copple, 1997; Goodman, Goodman, & Hood, 1989). Table 2 summarizes the principles and common threads discussed in this section.

Summary and Reflections

When we first conceived of this paper, it was because we informally saw commonalties that we could not find documented anywhere. The commonalties, both roots and threads, were far more compelling than we had imagined.

The ideas presented in this paper can be best summed up in a few key ideas. First of all, in keeping with basic constructivist principles, students need to be in charge of their learning. In other words, since meaning is constructed socially by the individual, then opportunities need to be provided educationally in order to enable these personal constructions to take place. Second, learning experiences are best or more effective and efficient when they are integrated and authentic, mirroring realistic life experiences. In other words, the more authentic the circumstances, the more lasting the learning. This notion can be compared to the old Chinese proverb, "I hear, and I forget; I see, and I remember; I do, and I understand." Finally, the act of teaching and learning should create, as a by-product, a passion and motivation for learning.

It is clearly significant that three different fields somewhat separately have arrived at such a high degree of consensus about teaching, learning, and curriculum. We feel these notions are the premises of a new way of considering the education of children that is coinciding with the end of this century. Like other fields experiencing paradigm shifts, the most common thread is the interrelatedness and interconnectedness of different aspects of the whole — the same wholeness we see as a goal for the development of learning and of healthy human beings.

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Biographies

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The Early Development of a Self-Extending System in Writing

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Abstract

The purpose of this study was to explore how children's writing development changes over time when interpreted from a cognitive processing position. As few methods were available for capturing such a complex behaviour as writing, it was necessary to design a suitable tool to record and then to analyse some of the features of children's behaviour when they were asked to write in the classroom. Target children (N = 120) in the first four years of school were observed while writing and their behaviour was recorded and categorised using the generated procedure. Analysis of observations indicated the development of a system of writing strategies through effective monitoring and searching that allows children to take their own learning further. The major change occurred in children's word writing ability between the second and third years at school. Changes were also noted in the use of rereading, editing, resources, and of oral language while writing. Thus, this study demonstrated there is some validity to the notion of a self-extending system in writing and explored some of the behaviours and strategies that may be involved in the operation of such a system.

Integral to her theory of how children become literate, Clay (1991) describes what she terms a "self-extending system" which incorporates the processes of strategic action, knowledge of the goals, functions and expressions of the skill, and self regulation. The interactive set of strategies which readers develop in this system are said to enable them to detect that an error has been made and to search for ways to correct it, or to use existing knowledge to solve novel problems. This system of strategies ensures that the more readers read, the more skilled they become and the less they need teacher intervention. Over time the system becomes more effective in controlling components of performance that become more fluid and automatic.

However, reading research does not provide a direct model of how such a strategic processing system might operate in writing and little systematic attention has been paid to such development empirically. It is likely that

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beginning *readers* may achieve a reasonable level of accuracy as they rely on strategies focused on meaning. But beginning *writers* must have additional strategies available from various sources to deliver their message in written form, as writing demands that the writer pay attention to all the levels of language at once. One example of potential differences in the operating characteristics of reading and writing systems is illustrated in the process of self-correction. While reading continuous text, the reader can confirm attempts through searching and monitoring processes that use a variety of sources of information including meaning, structure, phonology, and orthography. When the reader's monitoring efforts indicate an error has occurred and revision processes are mobilised, the internal strategy of self-correction becomes a visible behaviour. Clay (1991) has suggested that such strategic processing is closely related to progress. In writing, however, the strategies of self-checking and self-correcting might operate differently because the early writer is not able to confirm attempts as conclusively as in reading or because the writer is using his or her own output as input (Bereiter & Scardamalia, 1987).

Applying the concept of a self-extending system to writing suggests that it could, in part, operate through increased competency over some of the components of writing, such as motor skills and letter and word knowledge. As these require less conscious attention allocated to them, cognitive resources would become available for more difficult aspects of the task such as spelling multisyllabic words, attending to stylistic features, or linking ideas. Clay (1987) suggests that, for example, "invented spelling can lead to a control over writing that frees the child to write the messages he wants to write" (p. 59). As in reading, if the child solves these more complex aspects using strategies that strengthen each time, slightly more difficult novel problems are able to be solved and new learning occurs. Clearly, the acquisition of this knowledge depends upon the child's developing a system of generative strategies available for use on novel or more complex problems.

If one considers that the developmental functions of a self-extending system include the principle of reciprocal causation described by Stanovich (1986), the overall process may involve what he refers to as the "bootstrapping effect." For example, knowing how to articulate words slowly in writing in order to hear and record the sounds not only provides children with a strategy for dealing with new words, but also affords them the opportunity to confirm and extend the strategy as each new word is successfully solved. Another example would include the existence of a known writing vocabulary, which would allow for the possibility of extending general knowledge about the orthographic regularities of the English language, the chunks of words that can be used, and the morphemic units that occur across words. A self-extending system in writing would generate the power to go beyond itself when tackling problems as it would be constantly attending to things that had not been noticed before, then incorporating them into the existing strategies of the system.

In a discussion of the self-regulatory processes in writing, Zimmerman and Risemberg (1997) describe the behavioural processes of self-monitoring and self-verbalisation. Evidence of an effective processing system at work in writing could be provided by behavioural indicators that suggest the child may be operating a range of searching and checking strategies. For example, slow articulation of words to guide the writing of an unknown word, or using knowledge of one word to write another by analogy are indicators of *searching* processes, as is that of accessing external resources available in the ambient environment to assist with problems. Although the source of this latter assistance is external, using it indicates the child knows that this help is available and how to access it. Indications of *checking* or self-monitoring would be visible when children reread text and/or revise their writing. With increasing expertise, there should be a shift towards personal control over instructional resources (Clay, 1991; McNaughton, 1995).

The way in which the instructional setting is organised may promote or constrain development of a self-extending system in writing. For beginning readers, developmental sequences reflect the organisational procedures and curriculum goals operating in programmes such that different developmental features are associated with different programmes (Clay, 1991). Similarly, in writing, instructional practices and opportunities may operate to affect development. For example, the teacher-child interaction that occurs in conferencing can provide differential opportunities for independence and control (Glasswell, Parr, & McNaughton, 1996).

Research suggests children develop strategic behaviour in writing both outside school (e.g., Chomsky, 1970, 1971; Ferreiro & Teberosky, 1982; Read, 1971, 1975) and in the school classroom (Calkins, 1980; Dyson, 1985; Y. Goodman & Wilde, 1985; Graves, 1973, 1983, 1984;). For example, Graves (1983) talks of the production of drafts by eight- and nine-year-olds as evidence of "control of the writing process" (p.4) and, using anecdotal evidence, describes a developmental sequence in the types of changes made. Similarly, for spelling, Gentry (1982) identified changes children go through on their way to becoming competent spellers and Radebaugh (1985) examined the spelling strategies that third- and fourth-graders used to write a word. Indeed, the notion of strategic control is central to literacy learning (Cambourne, 1988, 1995; Clay, 1991). An assumption is made, certainly in New Zealand curriculum materials (e.g., Dancing with the Pen, 1992), that, as in early reading, learners develop strategic control over their writing. But, compelling as this concept is, there has been limited detailed examination of changes in writing behaviour across age or class levels and over time. Assumptions about the developmental shift towards greater strategic control over performance have not been examined systematically and empirically.

This study was designed to examine likely indicators of a self-extending system for writing. To reiterate, such indicators may include observable strategies for: (a) *word solving*, such as using vocalisation to break the word into parts or to make the phoneme-grapheme link; (b) *monitoring* and *editing*, such as rereading to check what has been written, to confirm the intended message, or to provide a cue for what may come next; and (c) *searching*, such as using analogies or classroom resources. The study further aimed to examine developmental shifts with respect to these indicators over the first four years of instruction. The focus of the study centered on answering descriptive questions, namely: What changes can be observed in written language produced by children? What changes occur in the way children check and alter their writing? What changes occur in the way children transcribe their writing, using searching strategies to problem solve?

Method

Participants

A total of 120 children, 62 boys and 58 girls, were chosen randomly from the class rolls in three schools. The children were in the first four years of school and there were 30 children at each level. The mean age in each group was: Year 1, five years nine months; Year 2, six years nine months; Year 3, seven years nine months; and Year 4, eight years eight months.

The three schools were selected on the recommendation of a school language consultant as having assistant principals, in charge of the first three years, who were knowledgeable about the teaching of writing. The 13 teachers had teaching experience ranging from less than one year to 28 years. All schools taught children from beginning instruction to Year 6 (ages 5-11). Two of the schools were in the urban area of South Auckland and one was in what might be described as the "inner city." The enrollments were 533, 305, and 263, respectively, with two schools having single classrooms and one an open plan design. The schools consisted of Anglo/European populations from 49% to 80%, and of Maori children from 5% to 29%, with other Pacific Island and Asian groups represented. One of the schools qualified for additional funding from the Ministry of Education to assist them in coping with pressures resulting from the diverse ethnic composition of the school and the proportion of unskilled and unemployed parents in the school community.

Procedure

A cross-sectional descriptive design was employed. The behaviours of individual children, as they attempted to write meaningful text during classroom writing sessions, were observed and recorded. Informal observations were made of organisational variables operating in the classrooms. Classroom writing programmes were usually of half-an-hour's duration with the younger children using only a part of that time to compose their story. The researcher observed the class from the beginning of the writing period and, when the children had begun to work, observed each of the target children individually for a period of five minutes. All writing behaviour, oral language behaviour, and other behaviours were recorded on a grid using a predetermined coding system (explained below). The concentration was on the transcription aspects of the process, particularly at the word level as this is critical to a developing process. Copies of the total piece of text being written were analysed and ratings of these included considerations of text level features and whether the writing carried a message.

Coding and Classification of Data

The observational categories initially encompassed six areas which, in pilot observations, were determined to be behaviours occurring whilst the children were writing. These six included: oral behaviours, word writing, rereading, editing, resource use, and interruptions. Subsequently these six were grouped under four categories: (a) oral behaviour, (b) words written, (c) monitoring (rereading and editing), and (d) resource use. In addition, a holistic analysis of the overall quality of the written piece was conducted. Each will be discussed.

Oral responses. To determine changes in the quantity of oral responses before or during writing, each child received a rating based on the amount of this activity as follows:

- *Zero points* were given when the child made no oral utterances or lip movements.
- *One point* was given when there were some oral utterances or lip movements (i.e., less than 50% of the words written had some indication of this behaviour associated with their production).
- *Two points* were given when many oral utterances or lip movements were observed (i.e., more than 50% of the words had some indication of this behaviour associated with their production).

Word writing. Two sub-categories of written words were used. The first was the number of total words written. All spaced letter groups were counted as words except for place names or children's names. Compound words were counted as one word however they were written. For example, *Faua bale*, to represent *fireball*, was counted as one word. Capitalisation was ignored. The category of *total words written* was used to indicate the competency of children in writing words, regardless of accuracy or assistance. The other sub-category was *total words written correctly for spelling without assistance*. To be counted in this category, no assistance from any source had been observed, including all the categories included in resource use. A word was counted if correctly written for spelling but not necessarily syntactically correct, for example, *of* for *off*. A word was counted as incorrect if a letter, written incorrectly, could be confused with another. For example, *doat* for *boat* was not counted. Apostrophes to denote possession did not have to be present for a word to be counted as correct. Colloquial words were counted as correct if written regularly (e.g., *oh*), as were common abbreviations, (e.g., *M.P.*).

Monitoring. This category includes the sub-categories of rereading and editing. Rereading of already composed text was recorded when there was a clear indication through pointing and/or oral reading, or eye or head movement, to identify the starting point of the rereading.

Changes over time in the type and quantity of editing made to text were computed from analysis of observation records. Editing was said to have occurred when the child, without assistance, changed the text already written in a way that altered the form of the text. Sometimes this change was at the letter level, for example changing *i* to *I* or *an tree* to *a tree*. Other changes were at a phrase level and included rejecting the opening to a sentence and beginning with a different form of words.

These changes resulted in both correct and incorrect text.

Resource use. Resources were classified as human (teacher and peer assistance) and material resources. Information on assistance given to children, whether child- or teacher-initiated, was drawn from the records. A count was made of the frequency with which children received help per word written, regardless of the number of consultations at the letter level, if there were no breaks in the consultation.

Material resources were categorised as one of four types, namely: (a) the child's own text whether a current or previous story; (b) a dictionary—this included alphabet and teacher-produced word lists, notebook dictionaries, or published dictionaries; (c) general resources—any resource such as a list, display or book that was in the classroom but had not been generated for the writing session; and (d) a specific resource—any resource that had been generated for that specific task, for example, the story written on the board prior to the writing time or the brainstormed list of useful words.

To be included in the analysis, the sequence of behaviour had to have been completed. In a few cases the child had just begun to consult the resource when the observation period finished. If it was unclear to the researcher the reason the child was searching a resource, she asked the child after the observation period to confirm the reason for the search. This most often occurred when the children turned back and searched through their own text.

Holistic analysis of written pieces. To obtain an independent measure of the overall quality of the writing, four experienced raters were used. The instructions directed the raters to assess the overall quality of the writing and to assign a rating on a five-point scale. The scale, which is included in the appendix, attempted to capture the overall quality of the child's writing while taking into consideration component aspects of the process (Boocock, 1991). Similar scales were used by Kroll (1983) and by Juel, Griffith, and Gough (1986). The description of the criteria to be assessed on the scale included word writing ability, phonemic analysis, structural considerations, and the extent to which the writing carried a message. As an example, writing samples were rated in category one if "The child's writing does not carry the message" and in category four if the child's writing consisted of "two or more paragraphs organised around a theme." Raters were also given five rated stories taken from the samples to illustrate the steps of the scale.

Inter-Observer Reliability

To establish reliability in the coding of data, care was taken to determine inter-observer perceptions. For the on-site observations, an independent observer watched 30 children (25% of the sample, from six of the classrooms) concurrently with the researcher. Inter-observer reliability was calculated overall and for specific categories. Agreement level was calculated on the sequential behavioural record and expressed as a percentage. Agreement was judged to have been achieved when the two observers recorded behaviour as occurring in a particular sequence and in a particular category. Oral responses were not included in this reliability calculation because of the difficulty experienced in arranging for two persons to be in a position to capture oral responses as they occurred. Non-agreement was indicated if only one observer had recorded behaviour as occurring. If a word writing sequence was interrupted by behaviour that only one observer recorded, non-agreement was judged to have been reached for this behaviour, but not necessarily for the word as a whole. Calculated in this way, there was 89.15% agreement overall.

To check agreement on specific categories of observation, Pearson product-moment correlations for monitoring behaviours were calculated. The resulting coefficients were 0.94 for *editing* and 0.87 for *rereading of written text*. These results indicate that the behaviour could be captured reliably using these procedures.

With respect to ratings of the quality of writing, four educators independently rated the samples of writing collected at the various observation points. Inter-rater agreement was high (>85%) and the scores assigned were mean ratings.

Results

To answer questions in the present study concerning change across class level groups, raw scores were computed and group means, percentages or ratios, were calculated for data in the four main category groups. The effect of class level was investigated using two one-way analyses of variance (ANOVA) for the categories of *total words written* and *total words written correctly and unassisted*. Post-hoc tests (Tukey) were used to determine if there were significant differences between class levels.

Qualitative Ratings of Writing Samples

The mean ratings for overall quality of writing produced were: Year 1, 2.00; Year 2, 2.54; Year 3, 3.17; and Year 4, 3.39. These ratings indicate an increase in writing quality for each class level. To illustrate this qualitative comparison, a category two rating was a "simple sentence, clearly delineated, with a clear message" (e.g., "When I went to my nanas hoes/ house to stae/stay the night I fale/fell out of bed."). Although 2.0 was the mean score for Y1 writing, the range was considerable, from samples such as "IFeHPYAyHeCWTJSeEtOVrW" to writing which was rated in category three, involving more extended writing using several sentences. In Y2, the best writing samples received a rating of category four. Apart from being two or more paragraphs, each consisting of several connected sentences around a theme, such category pieces illustrated mastery of conventions such as spelling and dialogue. The total mean increase between Y3 and Y4 was lower than between other class levels, suggesting an increase in quality was slowing between these levels. Also, the requisite competencies for the quality of writing at the top of the rating scale had not been achieved by most children in the class range of this study.

Oral Language Behaviour Before and During Writing

The difficulties of capturing oral language behaviours necessitated the use of broad categories. Oral behaviour declined in total across class levels. The percentages of records that contained no oral behaviour were: Y1, 17%; Y2, 23%; Y3, 43%; and Y4, 50%. Those records with oral behaviour were divided into two groups according to the proportion of oral behaviour per words written. Those texts with greater than or equal to half the words written involving oral behaviour were: Y1, 60%; Y2, 40%; Y3, 17%; and Y4, 10%.

Change across class levels was evident in the type of oral articulation that occurred. It should be noted that some children at Y1 level did not say anything as they wrote whilst some Y4 children responded orally while writing half or more of the words. The three children in Y4 who fell into this category, however, were producing indistinct lip movements or murmurings compared to more overt articulation in the younger children. More of the latter rated in the category of greater than or equal to half the words written involving oral behaviour.

Words Written

Table 1 presents data on the mean number and range of words written in the five-minute period at each class level. The words written information is expressed in two categories: (a) total words written and (b) total words written correctly and unassisted. Children increased their writing in both categories as they got older. Whilst there were increases in means between Y1 and Y2, and between Y3 and Y4, a major increase occurred on both types of words written between Y2 and Y3. Consideration of the written products suggests that for some children, the increase in the total words written was partly accounted for by the use of approximations or invented spellings (e.g., "my tay gun that shats plsdc sdcs that are savin ainchs laing" <my toy gun that shoots plastic sticks that are seven inches long>). These data are presented in Figure 1.

It is important to note that the range in both categories of words writ-

Table 1 Mean Number and Range of Total Words and Total Unassisted Correct Words Written in Five Minutes for Class Years

Words Written	Class Years[*]			
	Y1	Y2	Y3	Y4
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Words Total	9.73 (0.37)	13.47 (2.49)	28.43 (1.69)	32.10 (4.73)
Total Unassisted Correct Words	6.87 (0.31)	10.13 (1.30)	24.77 (0.66)	28.87 (2.66)

[*] n = 30 for each class level

ten was considerable at all class levels, with the less expert writers in each class producing very little. The top of the range continued to increase with age. The percentage of total words written correctly without assistance was: Y1, 70.2%; Y2, 75.5%; Y3, 87.2%; and Y4, 90%. The mean percentage of correct unassisted different words written of three letters or more was: Y1, 26.5%; Y2, 28.14%; Y3, 41.8%; and Y4, 46.6%.

To examine these differences, one-way analyses of variance (ANOVA) were conducted on the two categories, that is, total words written and total words written without assistance. The main effect of class level was significant on both variables: total words written, $F(3, 116) = 16.70$, $p < .01$, and total unassisted correct words written, $F(3, 116) = 19.09$, $p < .01$. Post hoc comparisons were made using Tukey (HSD) tests to establish significant differences between means. For total words written, these differences were between Y1 and both Y3 and Y4, and between Y2 and both Y3 and Y4, $q(116) = 11.30$, $p < .01$. For the category of total unassisted correct words these differences were similarly between Y1 and Y3 and Y4, and between Y2 and Y3 and Y4, $q(116) = 10.37$, $p < .01$.

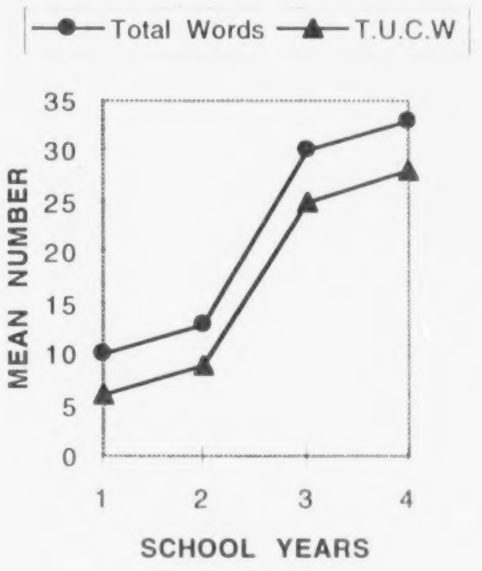

Figure 1: Mean Number of Words and Total Unassisted Correct Words

Monitoring

Rereading. Two types of behaviour were used to illustrate children's monitoring as they wrote. One source of data was the rereading of text that had been previously written and the other was changes made to the text as it was being written.

The proportion of writing samples containing rereading behaviour was Y1, 63%; Y2, 77%; Y3, 70%; and Y4, 50%. The percentage of children who reread fluctuated across the class levels with the lowest level occurring in Y4. The mean amount of children's rereading behaviour was adjusted for ten words written. These data are presented in Figure 2. It can be seen that the children in Y1 and Y2 reread a greater proportion of what they had written than those in Y3 and Y4.

Editing. The percentage of writing samples containing edits was: Y1, 27%; Y2, 67%; Y3, 73%; and Y4, 83%. The edits included changes to punctuation, whole words, and letters within words. The mean number of edits adjusted for ten words written per child was calculated and the results are presented in Figure 3. The graph indicates the direction of change from low levels of editing in Y1 to an increase in Y2 and a levelling off at Y3 and Y4.

Resources Used

The nature of teacher and peer interaction occurring during writing and the physical resources provided in the classroom were recorded. Constraints on the use of human and material sources of assistance were also noted. These constraints mainly involved the apparent emphasis placed on children's getting down their own messages by attempting problem words, which were to be checked later for spelling and meaning. As a result, in most Y3 and Y4 classes, children were discouraged from seeking out dictionary resources while they were writing.

Some comments can be made about patterns of assistance and availability that occurred. All teachers were available to children in some manner. They roved around the classroom, sat at their table, or sat at children's writing tables. All children sat in groups, often with individual desks for the older children or at larger tables that could seat four to six children. Peer interaction was encouraged to some degree although teachers often requested quieter noise levels while the children were working. In only one Y4 class did the teacher insist on absolute quiet when children were writing. Data from observations of teacher assistance, peer assistance, as well as that of materials as resource assistance are discussed below.

Teacher assistance. Instances of this type of interaction were obtained from observations of teacher-initiated behaviour with respect to the target children. Quantitative analysis of this category was restricted to a count of the number of words that included

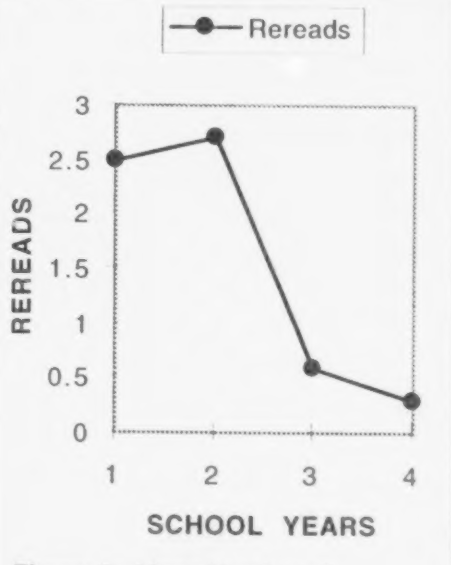

Figure 2: Mean Number of Rereads per 10 Words Written

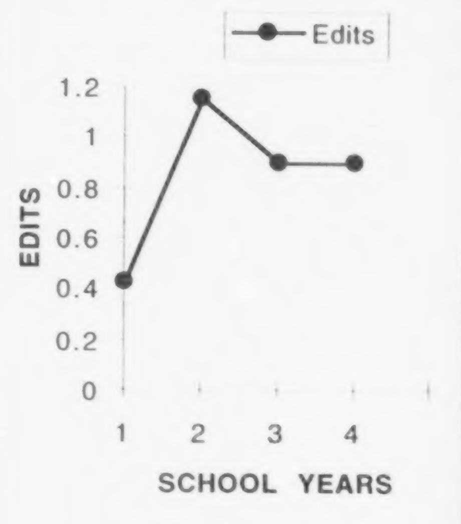

Figure 3: Mean Number of Edits per 10 Words Written

some consultation with a teacher and whether that assistance was utilised in the text subsequently written. Teacher help given to target children while they were being observed was restricted to the Y1, Y2, and Y4 levels because all Y3 target children wrote without teacher assistance during the observation time. It had been anticipated that more intensive teacher interaction might occur at the early levels, particularly whenever the child did not fully control the task and this proved to be the case. Eight of the target children received teacher assistance while being observed at the Y1 level, one child received assistance at Y2, and two at Y4. Even with the small number of teacher-child interactions observed, it is possible to comment on a pattern of interaction that emerged. Most of the teacher interactions occurred in one Y1 classroom, although teacher interactions occurred in three other classrooms. The teachers drew the children's attention to many aspects of language in brief exchanges as the children wrote; these included: (a) the meaning of their message, (b) the structure of their sentences, (c) the relationship between letters and sounds, and (d) the correct spelling of a word. The teachers also drew children's attention to external resources that were available. In only one instance did a teacher tell the child a spelling without prior or subsequent discussion. A pattern emerged from the data where the teacher was working with children who did not control many aspects of writing. The teacher worked with the child and did what she deemed to be necessary for the task to be completed successfully, whilst also trying to take the child's learning further.

Peer assistance. Children's interactions with peers were obtained and analysed in the same manner as those of teacher-child ones. All interaction with peers around particular problems resulted in the sample child simply being told letters or words, except for one child in Y1 who prompted the target child to articulate slowly the word requested. Of the two class levels where peer help was recorded, the information used by the target child was correct three times in Y1 and incorrect twice, and in Y4, correct eight times and incorrect once. The support of peers was given high priority in most classrooms. In some classes more competent children were observed to give considerable help to less competent writers, sometimes limiting their own writing efforts.

Assistance from material resources. The writing problems for which the children sought external help, other than from teachers and peers, predominantly involved the writing of words and letters. The categories of resources that children sought for help were their own text, a published dictionary, any teacher-written list, a general classroom resource, or specific teacher-written resources. Children across the class levels used their own text to refer to the spellings of words most frequently (Y1, 8 times; Y2, 1 time; Y3, 10 times; and Y4, 7 times). Use of other resources occurred infrequently.

Discussion

Change Over Time in Writing: Text Quality and Word Use

Across-group differences. The two measures used to detect change over time in children's writing yielded quite different results. The global rating of texts indicated the children, on average, did improve the quality of their writing. This was particularly marked at the early levels and there was some variability across schools. On the word writing measure, in contrast, some startling shifts in behaviour occurred between the Y2 and Y3 class levels. A possible explanation for this sudden increase in the number of words written correctly without assistance relates to our initial discussion of the development of skilled behaviour and the possible existence of a self-extending system in writing. Such an increase would appear to confirm the existence of processing mechanisms that enable children, who previously may have established control of only a small number of words, to develop ways of expanding their vocabularies. This would account for the sharp increase between the Y2 and Y3 level.

During the task of writing continuous text, the children's attention was focused on words they wanted to write and it seems that, through continued correct use of the most common ones, learning was taking place. These high frequency words became progressively easier to write fluently resulting in a threefold increase in the mean number of words written per five-minute period from Y1 to Y4. At the same time, the number of total words written correctly without assistance increased fourfold. These findings are consistent with the position that in learning how to write a few words accurately, they have also developed important generative strategies. They have learnt how to learn words independently in order to write novel ones. As this happens, other processing capacity becomes available for strategies to be extended and for attention to be given to other words and to other aspects of the process.

The data from this study support the movement towards control over longer, less frequently used words. The development of these generative strategies would enable this element of the processing system to become self-extending. The levelling off of mean number of total words that were written correctly without assistance that occurred between Y3 and Y4 may indicate that once children are able to write a core of frequently used words, their attention turns to other aspects of the writing process. However, this may reflect a programme effect. If children are choosing topics to write about, as they were in many classrooms, they themselves may be limiting their exposure to less frequently used unknown words by writing about familiar subjects. Therefore, the opportunities to extend the set of strategies available to them would be restricted.

Individual differences. By Y4 the gap had increased between the most competent and the least competent writers in both word writing categories. At this level the difference between the highest and lowest number words written for both categories had doubled in comparison to the first year of school. Croft (1987) reported increases in the variability of achievement in accurate spelling and the quantity of writing from Y3 to Y8. This research supports the finding of variability increasing with age in these two areas and also shows such variability occurring at an earlier age.

Evidence suggests that whilst the competent children are improving in writing, the children at the bottom end of the achievement range are not. These lower-achieving children may perceive the task as too frustrating, resulting in a sense of failure, less engagement in the task, and lower achievement. Stanovich (1986) has described this phenomenon in relation to progress in reading, in which the rich get richer and the poor poorer, as the "Matthew Effect." Essentially, the more children read, the better they become at it. Those who do not read well, and consequently do not have the opportunity to practice competent reading, do not improve. This study confirms the potential for this effect to be operating in writing. Such an outcome would be consistent with current theories of development (Vygotsky, 1978; Wood, Bruner, & Ross, 1976) which suggest that intensive individual instruction from experienced teachers who scaffold the task based on the elements of the writing process the child could control, would be beneficial in attempting to close the gap in achievement. Observations of teachers revealed that in most Y1 and Y2 classes, more individual teaching time was given to all children while writing than was the case in Y3 and Y4 classes.

This study also provides support for the notion that the lowest-achieving readers and writers would benefit from individual instruction at the point when most children are getting underway in reading and writing in order to prevent the cycle of non-achievement. Many children in New Zealand have that opportunity in a Reading Recovery programme (Clay, 1993). This programme includes a writing component in which the child writes a simple sentence with the aid of the teacher. In this study, the researchers noted that the least competent writers at Y3 and Y4 were children who had not had the opportunity to participate in the Reading Recovery programme, or who were new settlers from non-English speaking countries.

Change Over Time in Writing: Monitoring and Searching Behaviour

According to Clay's theory of children becoming literate (1991), monitoring strategies that are observable, such as rereading and editing text, and internal and external searching strategies would be important to the creation and increasing power of a self-extending system as they would generate, in a cumulative way, new knowledge and understandings about language. With respect to the areas investigated in this study, some comments can be made regarding strategy use.

The rereading behaviour that was evident suggested shifts in the amount of text children had to monitor overtly to keep control of the task. At Y3 and Y4 the children were able to write more words in the same amount of time and to maintain control over what they were producing before rereading their text. It is plausible to assume they were monitoring more internally as they wrote their stories, since their edits increased over time, while their overt rereading did not. This would suggest there was more processing capacity available for attending to other aspects of the process so they have the potential to notice more and learn more by themselves.

In the present study, another indicator of strategy use in writing was the child's use of resources to aid problem solving. We found there was limited use of other people and external material resources provided by the environment. Children were relying primarily on their own resources when writing, either through knowing how to write the word or attempting a spelling, often through an analysis of sounds. Factors in the environment appeared to contribute to this emphasis. For example, in some classes the children were encouraged to attempt to write the word themselves and check their spelling after the end of the writing period or when they finished the story. If the aim is developing active problem solving through a flexible system of strategies, the learner needs the opportunity to engage with the whole process in order to learn how to orchestrate the many components. Those classrooms that do not provide the children with knowledge of how to access a variety of resources to solve their problems are limiting learning opportunities.

If there were a self-extending system operating, what would be the role of the teacher? It would seem that the influence of the teacher, as well as the programme, would be most critical at the time when the children are developing a processing system, leading eventually to the children's being able to extend their learning further on their own. The nature of the teacher's assistance should be consistent with the notion of scaffolding within the children's zone of proximal development (Vygotsky, 1978; Wood, Bruner, & Ross, 1976) and be focused on developing a flexible system of strategies for operating effectively using both internal and external assistance.

Teacher observations in this study yielded examples of graduated response of teachers to children at lower achievement levels that fitted the scaffolding model. In time, the role of the teacher might shift to extending the range of opportunities to use this processing system to solve novel problems in text writing. Therefore, exposure to the special properties of different types of writing may be appropriate. In the present study, most writing was of a personal narrative type, however, some teachers said they interspersed this type of writing with other genres during the year. Indeed there was evidence on the walls of the classrooms that children were engaged in a variety of writing opportunities. This writing conformed to the qualities of transactional writing and indicated children were being exposed to other genres.

An important part of building the use of material resources into a child's repertoire of strategies would be providing a range of resources and showing how to access them to search for new information or how to check with attempts already made. Such instruction could begin in the initial classes with resources appropriate to the children's progress in writing.

It seems a balance would need to be struck, on the one hand, between children having access to and knowing how to use all the resources available to them in a way that enabled practising what they knew and, on the other hand, pushing their own learning fur-

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ther by encountering new problems to solve. An imbalance in the use of a range of strategies, such as occurred when children copied whole texts from the teacher's writing, provided fewer opportunities for learning.

Some comments can be made regarding possible ways of increasing access to resources. For example, in a large class where access to a teacher is difficult, it may be possible to increase the number of adults in the room, particularly when children are forming their processing system. In this study only two classes had some assistance from other teachers and parents. Special considerations are needed when incorporating peer assistance into the classroom environment. In terms of Vygotsky's theory (1978), the peer must be a more competent one to affect the course of development. In the few examples available in this study, peer assistance was not always helpful at the Y1 level, as the children were of similar expertise. At the Y4 level, peers offering help were invariably more competent and could assist children to solve their problems. To be an effective resource, children of diverse ability levels need to be available in the instructional setting.

Changes to Oral Language Use

This study confirmed a trend towards the development of direct processing from thought to written language without the intermediary of sound. It demonstrated the relative importance of oral behaviour, both phoneme analysis and the oral composition of text, when children first begin to write, but supported the notion that this behaviour is internalised over time. The analysis of data showed that silent writing occurred at all class levels. From a processing position, the children may not have acquired phonemic knowledge. Alternatively, they may have possessed other more efficient strategies to access words. Also, those children who did not orally compose text in advance may not have developed the strategy or may have moved beyond needing to use it.

Conclusion and Limitations of the Study

Three limitations should be kept in mind when considering the findings of this study. The first is that the small-scale nature of this study meant the cross-section of children sampled at each class level was only 30. This number limits the generalisability of the data in describing inter-individual change. Second, the research view changes across class levels, but to investigate this question further, we would need a longitudinal study of specific children to capture intra-individual change over time. The study pointed to environmental features that may constrain or increase the behaviour, but could not confirm their effect. Finally, it may be that five minutes per child for observation was insufficient to capture the use of material resources by the children. From the high percentages of words written without assistance, it would seem that occasions when external help was needed were not themselves high in number and, therefore, a study of these would require longer observation periods.

The purpose of this study was to explore how children's writing development changes over time when interpreted from a cognitive processing position. As few methods were available for capturing such a complex behaviour as writing, it was necessary to design a suitable tool to record and then to analyse some of the features of children's behaviour when they were asked to write in the classroom. It has been possible to suggest tentatively how children become more skilled at writing to the point where they are able to assume responsibility for their own learning. Further, this study demonstrated that there is some validity to the notion of a self-extending system in writing and explored some of the behaviours and strategies that may be involved in the operation of such a system. Additional research is needed to investigate the mechanisms of its operation. Another question to be explored is the nature of the reciprocity between the processing systems of reading and writing.

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Appendix

Holistic Analysis of Writing

Instructors to Raters

Please read these copies of draft writing. Where it is part of an ongoing story, this is included with the last date shown giving an indication of the amount of writing completed in one day. Allocate for the writing a rating according to the accompanying rating sheet. These categories are aimed at capturing the quality of the message the children are able to compose with the assistance available in their classroom. If assigning a rating of 3 or 4 according to the categories on the rating sheet, please indicate whether the writing fits A or B.

Rating Categories

CATEGORY 1
The child's writing doesn't carry the message

- Letters used predominately

- May include a few high frequency words

CATEGORY 2
One simple sentence with words clearly delineated and a clear message

- A few high frequency words written correctly.
- Dominant sounds recorded in other words

CATEGORY 3
One paragraph using 2-6 sentences.

- Many small high frequency words written correctly
- Either A) Many sounds correct in other words
  Or B) Gaps left for proofreading

CATEGORY 4
Two or more paragraphs using 6+ sentences around a theme

- Most high frequency words written correctly
- Either A) Few words written incorrectly
  Or B) Gaps left for proofreading

CATEGORY 5
More than two paragraphs possibly written over many days

- Most words written correctly
- More sophisticated sentence structures vocabulary and/or more literacy composition

Biographies

Christine Boocock is a Reading Recovery trainer coordinator at the National Reading Recovery Centre in Auckland, New Zealand. She has been involved in Reading Recovery since 1983 as a teacher, tutor, and trainer. Prior to this, she worked as a primary school teacher. While completing her Master of Arts degree at the University of Auckland, she undertook the research described in this paper. She is interested in all aspects of children's literacy learning.

Stuart McNaughton is an associate professor and head of the School of Education at the University of Auckland. His research and teaching interests are in developmental and educational psychology and focus on the development of language and literacy, and processes of education, socialization and culture. Dr. McNaughton's publications include books on reading and instruction (*Being Skilled: The Socialisations of Learning to Read*, 1987) and emergent literacy (*Patterns of Emergent Literacy: Processes of Development and Transition*, 1985). Recent work has been on a language activity developed for the New Zealand Ministry of Education for national school entry assessment. He is a member of the International Research Institute for Maori and Indigenous Education at the University of Auckland and his current research involves educational programs for optimizing the transition to school for diverse school populations.

Judy Parr teaches and conducts research in the School of Education at the University of Auckland. A cognitive-developmental psychologist, her major teaching responsibilities are in the area of developmental psychology, particularly relating to language development and research methods. Her major research focus is the development of expertise in written language and, as part of this focus, she has researched and published on the use of technology in written communication and, more broadly, in the teaching and learning process.

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An Examination of Sustaining Effects in Descubriendo La Lectura Programs

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Abstract

The study discussed herein examined the long-term impact of Descubriendo La Lectura (DLL) programs on second and third grade Spanish speaking students. The purpose of the study was to determine whether former DLL students sustain the gains they made in the program as they moved through the grades. Subjects included 264 students (184 second graders and 80 third graders). One-half of the subjects were former DLL students and one-half were students who were randomly selected from the grade cohort. Former DLL students and random sample students were compared on qualitative and quantitative measures. Results on all measures indicated that DLL students were either on par or ahead of random sample students, suggesting that DLL programs have sustaining effects for Spanish speaking students just as Reading Recovery programs have for English speaking students.

Reading Recovery programs in English have demonstrated much success in helping students who are struggling to learn to read (Clay, 1989; Pinnell, Lyons, DeFord, Bryk, Seltzer, 1994). The program consists of an average of 12 to 15 weeks of individually tailored instruction provided by a highly trained certified teacher. Reading Recovery programs are specifically designed for first grade students. The impact of Reading Recovery programs in English has been well documented and has indicated that the majority of children in Reading Recovery programs make accelerated progress while they are in the program. Their accelerated progress enables them to catch up with their peers, and exit the program in a short amount of time. In addition to accelerated progress, and a high rate of discontinuation, Reading Recovery programs in English have demonstrated that three years after successfully leaving the program, children still retain their gains. That is, they continue to make average progress and are on par with grade level peers even though they are no longer receiving individual attention or other special reading pro-

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grams (e.g., Clay, 1985; DeFord, Pinnell, Lyons, & Young, 1987; Lyons, Pinnell, McCarrier, Young, & DeFord, 1988; Rowe, 1995).

In 1988, the Reading Recovery program in English underwent a reconstruction into Spanish, and has continued to evolve. The Spanish reconstruction has been named Descubriendo La Lectura (DLL) and is now being implemented in eight states in the United States. Research on student acceleration in Descubriendo La Lectura programs has demonstrated that DLL, like English Reading Recovery, does enable students to catch up to their grade level peers (Escamilla, 1994a). To date, however, little research exists that examines the sustaining effects of Descubriendo La Lectura on Spanish speaking students after they leave the DLL program and continue through the grades.

The purpose of this study, then, was to assess the sustaining effects of DLL programs on students who had the program in the first grade and were in second and third grades during school year 1996-97. This study was an initial attempt to examine the long-range effectiveness of DLL.

As part of this study, it was also important to examine additional variables that apply to the teaching of Spanish speaking children in the United States that are peculiar to them and do not occur with English speaking students. For example, in the United States, English speaking students who received and were discontinued from English Reading Recovery programs continue to receive English reading instruction throughout their school years (through secondary school and college). Such is not the case for Spanish speaking students, the majority of whom are in Transitional Bilingual Education Programs in U.S. schools (Fradd & Tikunoff, 1987). In these programs, students are expected to transfer, at some point in their elementary careers, from reading in Spanish to reading in English.

The criteria for transfer from Spanish to English reading vary by school and by school district, with some school districts transitioning children as early as second grade and others as late as sixth grade. It is important to note that children can also be in classrooms labeled as bilingual classrooms and yet no longer be reading in Spanish.

Therefore, in examining sustaining effects of DLL programs in Spanish, it is important to study children's success vis-a-vis their continuing opportunities to learn to read in their native language (Spanish), as well as to examine whether any of their Spanish reading gains transfer as they begin to learn to read in English.

Given the above, a second purpose of this study was to examine the reading environments of children who have been discontinued from DLL to study how such environments may affect student progress in learning to read in Spanish and English.

During the 1996-97 school year, 2,924 Spanish speaking students participated in DLL programs across the United States (National Data Evaluation Center, 1997). Of these students, 1,575 or 81% were discontinued successfully from the DLL program. The number of DLL programs continues to grow, as does the number of Spanish speaking children entering public schools in the United States.

The growth of such programs, along with an increase in the number of children in need of them, makes it imperative to study long-term effects.

The Study

Participants

This study involved schools and teachers from certified Descubriendo La Lectura Programs in California, Arizona, and Texas. The study included 264 students (184 second graders and 80 third graders). Students were divided into groups as follows: (a) Descubriendo La Lectura (DLL) children who were served and discontinued from the program (n = 89 second graders; n = 42 third graders); and (b) random sample children drawn from second and third grade classrooms in the schools participating in the study (n = 95 second graders; n = 38 third graders). The study also included 39 schools and 63 teachers from the three participating states.

All sites are members of the Descrubriendo La Lectura Collaborative, which is a membership organization of school districts with DLL teacher leaders and teachers who are implementing certified DLL and bilingual education programs. Members of the collaborative, the purpose of which is to assure quality implementation of DLL and bilingual education programs, meet twice a year at different locations to discuss issues related to the implementation. As a part of membership, school districts sign a set of assurances to guarantee quality program implementation. Among these assurances are the following:

1. Members of the collaborative agree to participate in research on program effectiveness, particularly longitudinal research.
2. Members of the collaborative agree that Spanish speaking students in bilingual programs will continue to receive Spanish reading instruction through the third grade, although it is strongly recommended that the students continue their literacy development in Spanish beyond the third grade.
3. DLL teachers will have strong academic and instructional backgrounds in both Bilingual Education and Reading Recovery theory. They will be certified in DLL, and hold bilingual and bicultural endorsements (Guidelines for Participating in Reading Recovery in Spanish, 1995).

The guidelines above reflect standards and expectations for teachers implementing DLL programs, but do not cover basic bilingual classroom teachers. In English only classrooms in the United States, the majority of teachers are native speakers of English and have completed state approved programs to obtain teaching licenses. Such is not the case in Spanish language bilingual education classrooms. In many cases, bilingual education classrooms have personnel consisting of an English speaking teacher and a bilingual paraprofessional. In these classes, the paraprofessional is responsible for all Spanish language instruction including reading and writing. In other cases, bilingual classroom teachers hold licenses to teach, but have not obtained state bilingual endorsements. Thus, they may not be well versed in bilingual teaching methodology, including the teaching of reading and writing in Spanish.

Given the above, it is important, in studies such as this one, to consider the qualifications and experiences of the persons who are directly teaching Spanish speaking children (i.e., the basic bilingual education teachers). For this study, all bilingual teachers were asked to complete a survey to determine whether they were native speakers of Spanish, and if they held full bilingual endorsements. A sample survey is included in Appendix A. Table 1 presents results of attributes of second and third grade teachers who participated in the study. Data are separated by state, and do not include DLL teachers.

Table 1 illustrates that 72% of the teachers in the basic bilingual classrooms in the study were native Spanish speakers and 80% held bilingual endorsements. The caliber of classroom teachers in this study helped to insure that former DLL students and other bilingual students had opportunities to continue to learn to read in Spanish in classrooms where instruction was provided by fully qualified, bilingual teachers. It should be noted, however, that these classrooms do not necessarily represent typical bilingual classrooms.

Research Questions

Research questions addressed in the study were as follows:

1. Are former DLL students continuing to read in Spanish in second and third grades?
2. How does the performance of discontinued DLL students compare with the performance of random sample students in Spanish reading in second and third grades based on informal measures?
3. How does the performance of DLL students compare with the performance of random sample children on the end-of-year assessment of Text Reading in Spanish?
4. How does the performance of DLL students compare with the performance of random sample children on an end-of-year standardized reading achievement test in Spanish?
5. What proportion of DLL students achieve end-of-the-year scores that

Table 1 Attributes of Second and Third Grade Basic Bilingual Classroom Teachers

State	Grade	Native Spanish	Billingual Endorsement	N
Arizona	Second	8	10	10
	Third	6	5	6
California	Second	4	8	13
	Third	7	5	10
Texas	Second	17	18	21
	Third	3	3	3
Total		45	49	63

are at least within the average band for their grade level in participating schools in the study?

6. What proportion of DLL students and random sample students have been transitioned from reading in Spanish to reading in English? At what grade level did the transition take place?

The following definitions serve to clarify the various categories of children, teachers, and classrooms:

Discontinued Descubriendo La Lectura Children: Children who successfully completed the program and who were officially released from the program during the year or who were identified by the DLL teacher at the end of the year as having reached a performance level satisfactory for discontinuing.

Random Sample Children: Children who are Spanish readers and who were in the same bilingual classrooms as DLL children, but who did not receive the program.

Bilingual Classroom: A classroom where Spanish and English are used for instruction in all content areas and literacy for all or part of the school day. Children in bilingual classrooms receive their literacy instruction in their dominant or strongest language (in this case Spanish).

Descubriendo La Lectura Teacher: A teacher who has been fully trained and certified as a DLL teacher and whose training program focused on DLL.

Data Collection and Procedures

All students (DLL Program and Random Sample) who participated in the study were given two separate measures to assess Spanish reading achievement. These included: (a) Spanish Text Level Reading (developed for use with DLL program students and students who have discontinued from DLL programs); and (b) the SABE-2 Spanish Reading Achievement Test (CTB Macmillan/McGraw-Hill, 1994). In addition, schools that had transitioned children from reading in Spanish to reading in English were asked to administer two additional measures. These were: (a) the English Text Level Reading (developed for use with Reading Recovery students and former Reading Recovery students); and (b) the Gates MacGinitie Standardized English Reading Test. All subjects were given some or all of these measures at the end of the 1997 school year (the end of the school year varied by state and ranged from mid-May until mid-June). Both English and Spanish Text Level Reading measures were administered by certified DLL teachers. The SABE-2 Spanish reading achievement test and the Gates-MacGinitie English reading achievement tests were administered by classroom bilingual teachers.

In addition to the above, the research team created a survey for use in collecting information relating to student reading performance in bilingual classrooms. The Student Information Survey is included in Appendix B. The survey was designed to gather additional information related to classroom reading behaviors of Spanish speaking students. This survey provided information such as, which children were reading in Spanish, which were reading in both Spanish and English, and which had been transitioned to English reading. Information about other program interventions such as

ESL, special education, Title I, and other programs was also gathered. The survey was also used to gather teacher judgment data related to classroom reading and writing performance of former DLL and random sample students.

Results and Analysis

Research Question 1: Are former DLL students continuing to read in Spanish in second and third grades?

Data to address research question 1 were gathered from two sources. The first source was the data base established for all project sites using all four reading measures. Subjects who took the two Spanish reading measures were counted as being students who were continuing to read in Spanish. Students who took all four measures (two in Spanish and two in English) were counted as students who had either transitioned from Spanish reading to English reading or had added English reading to Spanish reading. From this data base, it was noted that all 264 children in the study were continuing to read in Spanish in the second and third grades. It was also noted that 62 students (23%) had been given the English language assessment measures as well as the Spanish language assessment measures. Further, all of the students who were assessed both in Spanish and English came from the same school district in Texas. Therefore, from these data, it would appear that the majority of students are continuing to read in Spanish and thus complying with the DLL collaborative agreements (please refer to the collaborative agreements explained earlier). Table 2 presents a breakdown of students for whom data on reading achievement in both Spanish and English were collected.

The second source of data to examine continuing opportunities to read in Spanish was taken from questions 1 and 3 from the follow-up Student Survey (see Appendix B). These questions asked classroom teachers to report in which languages students were reading and in which reading groups they were participating. Student Survey data were collected for 259 of 264 subjects. Classroom teachers

Table 2 Students Taking Both Spanish and English Reading Achievement Measures

Grade	Status	Spanish Only Data	Status	Spanish/English Data
Second	DLL	71	DLL	20
	Random	74	Random	21
Third	DLL	31	DLL	11
	Random	28	Random	10
Total		204		62

did not know who the random sample and DLL students were when they completed the teacher survey forms. These data serve to verify further that the vast majority of students (both DLL and random sample) are continuing to read in Spanish in the second and third grades. Further, most of the students who were reported to be reading in English were also reading in Spanish. However, it is noteworthy that a very small number of students in both second (n = 6) and third (n = 8) grades have been transitioned to reading only in English. Table 3 presents summary results of these sections of the Student Survey.

Research Question 2: How does the performance of discontinued DLL students compare with the performance of random sample students in Spanish reading in second and third grades based on informal measures?

To address this question, results of the Student Survey were compared across groups (DLL and Random). Informal measures consisted of obtaining teacher judgments regarding student classroom reading performance with respect to a variety of issues including: (a) special services students were receiving; (b) reading group participation; and (c) teacher judgment to predict future student performance, and to assess current attitudes toward reading and writing. To collect these informal data, classroom teachers completed a survey for each student in their classroom who was a part of the study. Student surveys were completed on 259 of the 264 total study subjects. Results of the informal assessment of student progress are presented below.

Special Services Received by Students

Data were collected to determine whether former DLL students needed or were referred to more special services than random sample students. Data presented below indicate there are no major differences in the participation of DLL students and random sample students in special programs. More than half of DLL and random sample students receive ESL as a service. This is to be expected since both groups of students are still learning English, and ESL is a basic part of a bilingual education program. All other special services such as Title I and Special Education have minimal participation by either

Table 3 Language(s) for Reading Instruction During Spring 1997

Grade	Status	Spanish Only	English Only	Both	Total
Second	DLL	71	2	21	
	Random	74	4	24	
Third	DLL	18	4	7	
	Random	24	4	6	
	Total	187	14	58	259

group of subjects. From these criteria, presented in Table 4, former DLL students are doing as well as random sample students.

Reading Group Participation

An interesting finding from the survey was that the vast majority of bilingual classroom teachers in the study continue to use ability grouping as the predominate means of grouping students for instruction. However, they use a variety of assessment techniques to make group placement decisions. Survey information indicated that bilingual classroom teachers used the following information to place students in reading groups, and that these methods were the same for both former DLL students and random sample students.

Table 4 Special Services Received by Students

	DLL		Random Sample	
Service	Number	Percent	Number	Percent
ESL	80	61%	78	59%
Title 1	35	26%	28	21%
Speech	5	3%	8	6%
Special Education	1	1%	3	2%
Other	18	13%	18	13%
None	16	12%	19	14%

Table 5 Reading Group Participation

Group	DLL		Random Sample	
	Number	Percent	Number	Percent
High	74	59%	69	54%
Average	50	39%	46	36%
Low	1	1%	10	8%
Other[a]	1	1%	3	2%

[a]Class does not group for instruction

Techniques used in order of their frequency were: (a) teacher observation, 66%; (b) informal reading inventory, including Running Records, 54%; (c) other information (e.g. previous teacher recommendation), 27%; (d) placement test from a basal reader series, 23%; (e) information from a student's previous report card, 15%; and (f) standardized reading test, 3%.

Using the above information, teachers reported the data presented in Table 5 with regard to student grouping for Spanish reading instruction.

These data provide further evidence that DLL students are faring well in bilingual education classrooms in Spanish reading. These data indicate that over 1/2 of the former DLL students are in the high reading groups in their second and third grade classrooms, and that DLL and random sample students are found in the high reading group in roughly equal percentages. The same can be said for the average and low groups. Again, using the criteria of reading group assignment, former DLL students are faring as well as random sample students.

Prediction Regarding Future Reading Performance

Bilingual classroom teachers were also asked to predict how well they thought their students would do in reading in subsequent school years. These data are presented in Table 6.

Once again, these data suggest that classroom teachers predict DLL students will fare very well or satisfactorily at even higher rates than random sample students. They also predict that fewer DLL students will require supplementary assistance.

Reading and Writing Attributes

Finally, bilingual classroom teachers were asked to rank, on a scale of 1-5, each one of the students in the study using the following attributes relative to reading and writing. The data presented in Table 7 indicate the mean ranking for DLL and random sample students on each attribute.

Drawn from teachers' perspectives, these data suggest there are no major differences in student reading and writing attitudes and abilities between for-

Table 6 Teacher Prediction Regarding Future Reading Performance

Teacher	DLL		Random Sample	
Prediction	Number	Percent	Number	Percent
Very Well	66	50%	54	40%
Satisfactory	50	38%	45	33%
Will Need Extra Help	12	9%	26	20%

mer DLL and random sample students. In sum, all data indicate, in the view of teachers, that former DLL students are performing as well as other students in classroom literacy activities.

Research Questions 3 and 4: How does the performance of DLL students

Table 7 Reading and Writing Attributes

Attribute	DLL Mean	Random Sample Mean
Reading Ability	3.8	3.8
Writing Ability	3.2	3.4
Attitude Toward Reading	4.2	4.2
Attitude Toward Writing	3.6	3.5
Chooses to Read	3.7	3.6
Selects Books at his/her Level	4.2	4.2
Independent in Class Work	3.5	3.9
Tries Hard	3.5	3.8
Completes Work	3.8	3.7
Attends Well In Class	3.7	3.7
Responds in Group Discussion	3.4	3.6

compare with the performance of random sample children on the end-of-year assessment of Text Reading in Spanish? How does the performance of DLL students compare with the performance of random sample children on an end-of-year standardized reading achievement test in Spanish?

For research questions 3 and 4, data were collected by administering the Spanish Text Level Reading assessments to all second and third grade subjects. These reading assessments have been especially developed for use with students in Descubriendo La Lectura programs. The text level reading measure was administered individually to children by a certified DLL teacher. Children were asked to read stories aloud while the DLL teacher took a Running Record of reading behavior and calculated an accuracy level. Children continued reading at higher levels until they reached a level where they read below 90% accuracy. The score on text level reading is the highest level read with at least 90% accuracy. Levels range from A-30.

All subjects also took the SABE-2 Spanish achievement test in reading. These tests were group administered by classroom bilingual teachers. Scores obtained were from the Total Reading score of the test. For the Spanish Text

Table 8 Results of Spanish Text Level Reading

Grade	Status	Mean	SD	N
Second	DLL	25.6	5.2	89
	Random	23.9	7.0	95
Third	DLL	28.4	4.0	42
	Random	24.9	8.0	36
Total				262

Table 9 Results of SABE-2

Grade	Status	Mean Raw Score	SD	Mean Stanine	N
Second	DLL	31.6	7.8	5	81
	Random	31.9	8.5	5	86
Third	DLL	39.1	8.0	5	34
	Random	38.0	9.8	4	40
Total					241

Level Reading, mean reading levels were calculated for each group and each grade. For the SABE-2 test, mean reading levels were calculated for each group and each grade two times -- one time using raw scores and a second using percentiles. A two-tailed *t* test was used to test for significant differences between group means. Tables 8 and 9 present results for the Spanish Text Level Reading measure and the SABE-2 test measures.

From the calculated means of Spanish Text Level Reading, it is noted that the DLL students were above their random sample counterparts in both second and third grades. For both second and third graders, *t* test results indicated that the differences were statistically significant for second graders ($t = 1.87$, $p < .001$) and for third graders ($t = 2.44$, $p < .001$). These findings provide support for the notion of sustaining effects. Former DLL students are continuing to progress in their acquisition of literacy without additional special program support. In fact, their achievement in Spanish reading is higher than the random sample students.

From the calculated means of the raw scores on the SABE/2 Spanish Reading Achievement Test, it is noted that the DLL students also performed above their random sample counterparts in third grade, and at a roughly equivalent level in the second grade. In the second grade both groups were in the fifth stanine, and in the third grade both groups were in the fourth stanine. A *t* test was conducted using the raw score data to ascertain whether these differences were statistically significant. For both second and third graders, *t* tests did not indicate that the differences between former DLL program students and randomly selected students were statistically significant. These data provide solid evidence to support the notion of sustaining effects. Specifically, former DLL students were selected for the program because they were performing far behind their peers in first grade. These data suggest they are no longer far behind, but rather reading at a level that is equivalent to their peers. These data provide further evidence that former DLL students are continuing to progress in their acquisition of literacy without additional special program support.

It is further significant to note that, at the second grade level, mean percentile scores for both DLL and random sample students are above the 50th percentile (54.2 for DLL; 55.5 for the random sample). This is an indication that DLL students are not only keeping pace with random sample students in the study, but also are achieving on par with national norms. At the third grade level, mean percentiles for DLL and random students are also similar (23.8 for DLL; 26.7 for the random sample). However, scores for both groups are below the 27th percentile. Achievement levels for both groups are well below national norms and represent a significant decrease in achievement from the second grade.

The exact causes of this decline in scores cannot be determined from the data presented in this study. However, it might be important to consider the role played by language status differences between English and Spanish. It has been well documented that, in most bilingual programs in the U.S., there is an unequal status between English and Spanish (Escamilla, 1994b;

Shannon, 1995). English is the high status language, while Spanish has a lower status. As a result, after several years in U.S. schools, students begin to think there is no value in knowing Spanish. As a result, they begin to reject Spanish and resist learning in Spanish. This resistance develops at the same time that schools are putting pressure on teachers to transfer students from Spanish to English reading, and to exit them from bilingual programs.

Given this situation, it may be that the decline in Spanish reading achievement is a reaction to the message that learning in Spanish is not as important as learning in English. As Shannon (1995) reports, children and teachers respond in real ways to the "hegemony of English." It is important that any report on student achievement in Spanish in bilingual programs in the U.S. consider language status differences and the context in which bilingual education programs are implemented as they undertake studies such as this one.

Research Question 5: What proportion of DLL students achieve end-of-the-year scores that are at least within the average band for their grade level in participating schools in the study?

Research question 5 examined the proportion of DLL students who achieved end-of-the-year scores that were at least within the average band for their grade level in the schools in the study. To address this question, an average band of performance was calculated using the random sample of second grade children in this study. An average band was also calculated for third grade using the random sample third graders in the study. Average bands were calculated using both Spanish Text Reading and SABE-2 raw scores. The average band was calculated as ± .5 standard deviations from the mean. This calculation determined the upper and lower band of average performance. The numbers of students who achieved or exceeded average band performance and the percentages of total DLL students are presented in Table

Table 10 Numbers and Percentages of DLL Children in End-of-Year Average Band on Spanish Text Reading and SABE-2 Spanish Reading Test

			Met Average Band		Exceeded Average Band		N
Grade	Measure	Average Band	Number	Percent	Number	Percent	
Second	Spanish Text Reading	20.45-27.48	39	43.8%	43	48.3%	89
Second	SABE-2 Raw Scores	27.62-36.21	37	45.6%	24	29.4%	81
Third	Spanish Text Reading	20.93-29.01	6	14.4%	33	78.6%	42
Third	SABE-2 Raw Scores	33.13-42.93	17	50.0%	10	29.2%	34

10. The vast majority of DLL students both in second and third grades achieved or exceeded average band performance on both measures (Spanish Text Reading and SABE-2 Raw Scores). These data provide further support for the notion that the initial positive impact of Descubriendo La Lectura Programs is sustained across grade levels.

Research Question 6: What proportion of DLL students and random sample students have been transitioned from reading in Spanish to reading in English? At what grade level did the transition take place?

Research question 6 was meant to investigate whether or not sustaining effects of DLL in Spanish may have transfer effects as Spanish speaking students begin to learn to read in English. To address the question, data were collected on DLL program students and random sample students who had been transitioned from reading in Spanish to reading in English. Transitioned students were given the Gates MacGinitie English Achievement Test to assess their progress in English reading.

Of the 39 schools participating in the study, only one school in one school district reported transitioning students from Spanish to English reading in either the second or the third grade. In this district, transition data were reported in second grade for 20 DLL students and 21 random sample students. The same district reported transition data in third grade for 11 DLL students and 11 random sample students.

With only one district and one school reporting transition data, it was not appropriate to do extensive data analysis, as data reported were not representative of the larger group of DLL and random sample students. Further, in this particular school district, all Spanish speaking children transition to English reading in the second grade and thus the proportion of DLL students making the transition is exactly the same as English language students. The policy is applied to all Spanish speaking students regardless of special program category.

The fact that only one district and school reported data on transition from Spanish to English and on English lan-

Table 11 English Reading Achievement of DLL and Random Sample Students Transitioned from Spanish to English Reading

Grade	Program	N	Mean/ sd Vocabulary	Mean/ sd Comprehension
Second	DLL	20	28.05/28.06	27.55/28.47
	Random	21	30.29/22.11	28.70/22.00
	Total	41		
Third	DLL	11	21.46/28.13	21.36/24.81
	Random	10	10.3/13.73	9.90/13.99
	Total	21		

guage achievement it is not viewed as a problem in this study. In fact, according to the guidelines for participating in Descubriendo La Lectura, school districts commit to keeping students in Spanish reading through the third grade. The majority of districts in this study are simply choosing not to transition students to English reading until the fourth grade or beyond.

The question about sustaining effects of DLL program and their potential for transfer to English reading programs is an important one. However, it will need to be addressed in future longitudinal studies that look at reading achievement of former DLL students in fourth grade and beyond. The majority of districts in this study are simply choosing not to transition students to English reading until the fourth grade or beyond.

Data on the English Reading Achievement of transitioned students are presented in Table 11. Data are presented only as descriptive statistics. Because of the low numbers of students and the fact that they all came from the same school district, no statistical analyses were conducted with these data and they should be discussed only in a very preliminary way. While they provide a snap-shot that suggests former DLL students are doing as well in English reading as a random sample of second graders, it must be noted that the achievement of both groups in English reading is low. Similarly, in third grade, former DLL students are doing much better in English reading than random sample students, however, achievement in both groups is low. Again, because of the low number of students in each group, these findings should be considered with caution.

Discussion

The data reported here establish that the DLL program achieved sustaining effects with Spanish speaking students who had been in DLL programs in first grade, who had been discontinued from these programs, and who were continuing to read in Spanish in second and third grades. Results of this study, considered collectively with research on acceleration of Spanish speaking students in DLL programs (Escamilla, 1994a), establish that Descubriendo La Lectura is having a positive impact on Spanish speaking students in much the same way that Reading Recovery is impacting English speaking students.

DLL children could be considered as ones in need of long-term interventions beyond DLL. As second language learners of English, they will need continued support in both their first and second languages to insure their long-term success in U.S. schools. Aside from language, children who participate in DLL have other social needs. They often are among the poorest of all school-aged children in the United States. They most likely attend large urban schools that are overcrowded and lacking in resources, and they are likely to be in classrooms with teachers who have no preparation in how to teach them. DLL is having a positive impact on these students, however, issues affecting their academic success may extend far beyond literacy instruction. DLL is helping these children become literate, but this program cannot solve the social and societal issues that are part and parcel of growing up in the United States as members of a cultural and linguistic group that is marginal-

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ized and undervalued by the larger society.

Evidence of sustaining effects presented in this study include both qualitative and quantitative data. Qualitative data indicate that former DLL students in both second and third grades do not require special services such as Title I at higher rates than random sample students, they are as likely to be in the average or high reading group in their classrooms as random sample students, and their teachers report that their achievement in and attitude toward reading and writing are very similar to random sample students. Their teachers perceive them just as likely to be successful in reading and writing as they perceive other Spanish speaking students.

Quantitative data gathered on Spanish reading achievement on the DLL Spanish Text Level Reading indicated that former DLL students were achieving at higher rates than randomly selected students both in the second and third grades and that these differences were statistically significant in favor of former DLL students. Mean scores for the former DLL students in second grade were at level 25 on Spanish Text Reading. Mean scores for the former DLL students in third grade were at level 28 on Spanish Text Reading. Third grade results are promising in that they also provide evidence for sustaining effects of the DLL program two years after discontinuation from the program, and indicate that former DLL students are continuing to progress in Spanish reading without further program assistance.

All subjects were also given the SABE-2 Spanish Reading Achievement Test. Again, DLL students were achieving at levels that were at or above their random sample counterparts in both second and third grades. For these measures, achievement differences between DLL and random sample students were not statistically significant, providing support for the notion of sustaining effects since the achievement of DLL students is similar to that of randomly sampled students. This is true because when first selected to participate in DLL, this group's achievement was far below that of all other students. The goals of DLL are to have children reach the average of their class in reading and writing, while at the same time to develop independent learning strategies. Results of this study indicate the children are achieving these goals.

Further evidence of sustaining effects is apparent in second graders' achievement on the SABE-2 where their mean was at the 54th percentile. The third graders' mean percentile on the SABE-2 was only at the 23rd percentile, representing a significant decrease from the second grade. However, this decline occurred in the third grade for both DLL and random sample students. When interpreting these data for Spanish speaking students, it is important to consider the role that language status may play in both student and teacher beliefs about the importance of literacy in Spanish.

Achievement of discontinued DLL students in second and third grades was further examined by calculating the number and percentage of former DLL students who were achieving within or above the average band of reading on the Spanish Text Level Reading measure and on the SABE-2 Test. In second grade, 92% of the former DLL students were achieving within or above the average band on Spanish Text Level Reading and 75% were achieving within or above the average band on the SABE-2 Spanish Reading Achievement Test. In third grade, 93% of the former DLL students were achieving within or above the average band on Spanish Text Level Reading and 79% were achieving within or above the average band on the SABE-2 Spanish Reading Achievement Test.

A very small number of former DLL students in the study, who were from the same school district, were transitioned from Spanish reading to English reading during the course of the study (n = 20 second graders and n = 10 third graders). These low numbers indicate that school districts participating in the implementation of Descubriendo La Lectura are following implementation guidelines and not transitioning students before the end of the third grade. Data on English reading achievement were presented herein, however, no statistical analyses were conducted. Collecting and analyzing data on former DLL students as they transition from Spanish to English reading is of critical importance to future longitudinal studies dealing with the impact of DLL on students. However, such data should not start being collected until fourth grade, and must include only students who have had consistent and continuous instruction in Spanish reading until the fourth grade or until they have met academic criteria for transition.

Summary

In summary, results presented herein, indicate that DLL programs are affecting former students in a positive way after they are successfully discontinued from program services. Data presented here establish that the DLL program has sustaining effects in much the same manner as Reading Recovery programs in English. It must be noted that this study is the first of its kind, and there is a crucial need for further studies addressing these issues for Spanish speaking students.

Finally, it is important to state, once again, that research on Descubriendo La Lectura programs and children cannot and should not consist of simple replications of studies conducted on English Reading Recovery programs. The implementation of Spanish DLL programs has a political and social reality that is quite different from English Reading Recovery. This unique political and social reality must be considered in future research studies, in order to insure valid and reliable interpretation of study results.

As an example, in all likelihood, students who participate in and are discontinued from English Reading Recovery will continue to receive English reading instruction throughout their school careers. Such is not the case for Spanish speaking students. In many cases, basic literacy instruction for Spanish speaking students is inconsistent and often interrupted. For example, it is not unusual to find school and bilingual programs where students receive literacy instruction in Spanish one year, in English the next year, and then Spanish the following year. It is also not unusual to find programs where students are prematurely transitioned into English (Cziko, 1992; Escamilla, 1994c).

In addition, the overwhelming majority (95%) of Spanish/English bilingual programs in the United States are transitional in nature (Fradd & Tikunoff, 1987). This means that Spanish speaking students will receive Spanish reading for only three or four years or until they are transitioned into English reading. There is strong research evidence that literacy skills and strategies transfer from one language to another (Escamilla, 1987; Krashen & Biber, 1988; Lesher-Madrid & García, 1985; Rodríguez, 1988). However, this research base must be extended to include students who were former DLL students. Future studies in this area that look at former DLL students as they begin to read in English must consider both the quantity and quality of Spanish reading instruction after students were discontinued from DLL programs. While English Reading Recovery programs will not likely be scrutinized to see if former students are applying reading skills and strategies in a second language, Descubriendo La Lectura programs most assuredly will be studied vis-a-vis transfer to the students' second language. Moreover, it is important that future studies investigate former DLL students in the upper elementary grades and examine their English reading achievement as well as their Spanish achievement.

Research in the area of Descubriendo La Lectura is promising, but must be considered to be in its infancy. Much remains to be studied. However, if basic bilingual programs are inconsistently implemented or are not operating using sound pedagogy, then the efficacy of Descubriendo La Lectura programs will also most likely be affected. It is critical, therefore, for future research to study DLL in the context of the larger school's implementation of bilingual education, as well as in the context of the sociolinguistic realities of the status of Spanish and Spanish speaking populations in the United States.

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Hilmar Unified School District

Lindsay Unified School District
Los Angeles County Office of Education
Long Beach Unified School District
Los Nietos School District
Madera Unified School District
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Planada School District
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Porterville Unified School District
San Diego City Schools
San Diego Unified School District
Santa Rosa Unified School District
Sonoma Unified School District
Vacaville Unified School District
Visalia Unified School District

Texas

Carollton-Farmer's Branch Independent School District
Fort Worth Independent School District
McAllen Independent School District
Spring Branch Independent School District
United Independent School District (Laredo)

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Appendix A

Descubriendo La Lectura
Follow-Up Study
1996-97
Teacher Information Form

DLL Teacher Leader: Please complete the following information for each classroom teacher from whom you have taken children for this study. This includes teachers who teach former DLL students and randomly selected students.

Teacher Name:____

Grade: __________ District: ______________________

Address:

____

____

State Bilingual Endorsements: ________ Yes ________ No

Native Spanish Speaker: ________ Yes ________ No

Number of Years Experience as a Bilingual Teacher __________

Comments:____

Appendix B

Descubriendo La Lectura
Follow-Up Study
1996-97
Student Survey

Complete for each student in the DLL study (former DLL and random sample students).

Child's Name: ____

Grade: ____________ School: ____________________________

District: __________________________________

1. Student is currently reading in:
   ____ Spanish ____ English ____ Both

2. What special services are currently being received by the student:
   - ___ ESL
   - ___ Title 1
   - ___ Speech
   - ___ Special Education
   - ___ Other (Please specify)
   - ___ None

3. In what reading group is the student currently participating?

Spanish	English (if applicable)
___ High	___ High
___ High Average	___ High Average
___ Average	___ Average
___ Low Average	___ Low Average
___ Low	___ Low
___ Other (e.g., no ability groups)	___ Other (e.g., no ability groups)

4. What information did you use to place students in these reading groups?

Spanish	English (if applicable)
___ Basal Reader Test	___ Basal Reader Test
___ Standardized Reading Test	___ Standardized Reading Test
___ Informal Reading Inventory	___ Informal Reading Inventory
___ Teacher Observation	___ Teacher Observation
___ Previous Student Report	___ Previous Student Report
___ Other (Please describe)	___ Other (Please describe)

5. What grade did the child receive in reading on the last report card? (Explain your assessment system if it is other than grades)?

6. In what basal reader is the child currently reading? (Indicate grade level) If no basal reader is used, approximately what grade level is the child reading? How did you determine this?

7. How do you predict the child will perform in reading next school year?
___ very well
___ satisfactory
___ will need extra help

8. Rate the attributes that best describe this child by rating him/her on a scale of 1-5 (1=weak; 5 = strong).

Spanish
___ Reading Ability
___ Writing Ability
___ Attitude Toward Reading
___ Attitude Toward Writing
___ Chooses to Read When Time

Allows
___ Selects Books on His/Her Own
___ Independent in Class Work
___ Tries Hard
___ Completes Work
___ Attends Well in Class Work
___ Responds in Group Discussions

English (if applicable)
___ Reading Ability
___ Writing Ability
___ Attitude Toward Readingg
___ Attitude Toward Writing
___ Chooses to Read When Time

Allows
___ Selects Books on His/Her Own
___ Independent in Class Work
___ Tries Hard
___ Completes Work
___ Attends Well in Class Work
___ Responds in Group Discussions

9. Other comments about the student as a learner of two languages:

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Encouraged are submissions that include multiple perspectives from disciplines such as child development, linguistics, literacy education, psychology, public policy, sociology, special education, and teacher education. Contributions may include: (a) reports of empirical research; (b) theoretical interpretations of research; (c) reports of program evaluation and effective practice; and (d) critical reviews, responses, and analyses of key conceptual, historical, and research perspectives. Manuscripts representing diverse methodologies including ethnographic, empirical, and case study research are encouraged.

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- A one-year subscription to RRCNA newsletters
  Council Connections (3 issues)
  Running Record or *Network News* (2 issues each)
- A one-year subscription to *Literacy Teaching and Learning* research journal (2 issues)
- Special member rates on other RRCNA publications
- Voted representation on the RRCNA Board of Directors
- A lapel pin and membership certificate for new members
- A network of colleagues throughout the Continent

☐ Renewal ☐ New

Name ______________________________

Employer ______________________________

Work Street Address ______________________________

City ______________ State/Province ____________ Zip Code ________

Phone (____)______________ FAX (____)______________

E-Mail ______________________________

Home Street Address ______________________________

City ______________ State/Province ____________ Zip Code ________

Phone (____)______________ FAX (____)______________

Preferred Mailing Address: ☐ Home ☐ Work

Check √ the appropriate items below that apply to you.

☐ RR Teacher ☐ RR Site Coordinator

☐ RR Teacher Leader ☐ RR Leader Trainer

☐ Partner: Specify ○ Classroom Teacher ○ Title 1 Teacher ○ Principal
○ Administrator ○ Parent ○ Volunteer

☐ I am associated with Descubriendo La Lectura.

☐ I am associated with Canadian/Western Institutes of Reading Recovery.

— continued on next page —

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Membership Application page 2

Please help the Council maintain an accurate Reading Recovery database by providing the following information:

If a Teacher Leader, list your affiliated university regional training center:

____

If a Reading Recovery Teacher, list name of Teacher Leader:

____

If a Reading Recovery Site Coordinator or Teacher Leader, list name of your site(s):

____

I was referred for membership by: ________________________

I would like to:

__ pay annual membership dues of $40.00 per year.	$________
__ pay supporting membership dues of $100.00 per year.	$________
__ to make an additional tax deductible charitable contribution to help support the Council's work.	$________
Total Amount of Membership and Contribution:	$________

__ Visa or __ MasterCard

_ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ _ _

Expiration Date: _ / _ mo. _ / _ yr.

Signature: ____________________

Office Use Only
Remittance Advice: RRCNA

Name ________________
Check # ________________
Invoice # ________________
Date ________________
Amount ________________

Please send completed form with your check, credit card information, or purchase order made out to RRCNA to the following address:

Reading Recovery Council of North America
1929 Kenny Rd., Suite 100
Columbus OH 43210-1069
(614)292-7111 FAX (614)292-4404

Reading Recovery Council of North America

READING
RECOVERY®
COUNCIL
OF NORTH AMERICA

VISION

The vision of RRCNA is that children will be proficient readers and writers by the end of first grade.

MISSION

The mission of RRCNA is to ensure access to Reading Recovery for every child who needs its support.

PURPOSE

The purpose of RRCNA is to sustain the integrity of Reading Recovery and expand its implementation by increasing the number of individuals who understand, support, and collaborate to achieve the mission of the Council.

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Address inquiries to:
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Columbus, OH 43210.

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